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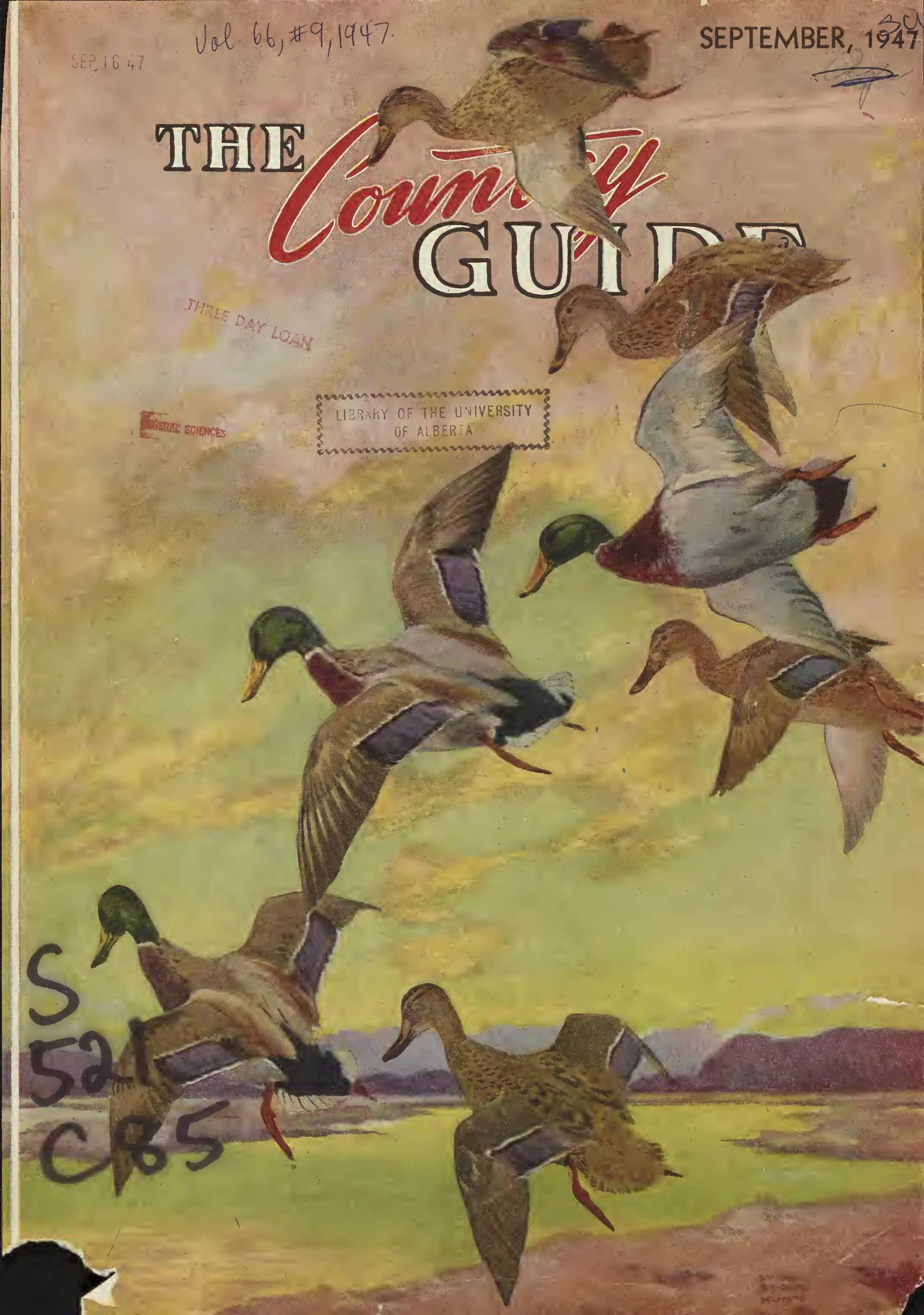
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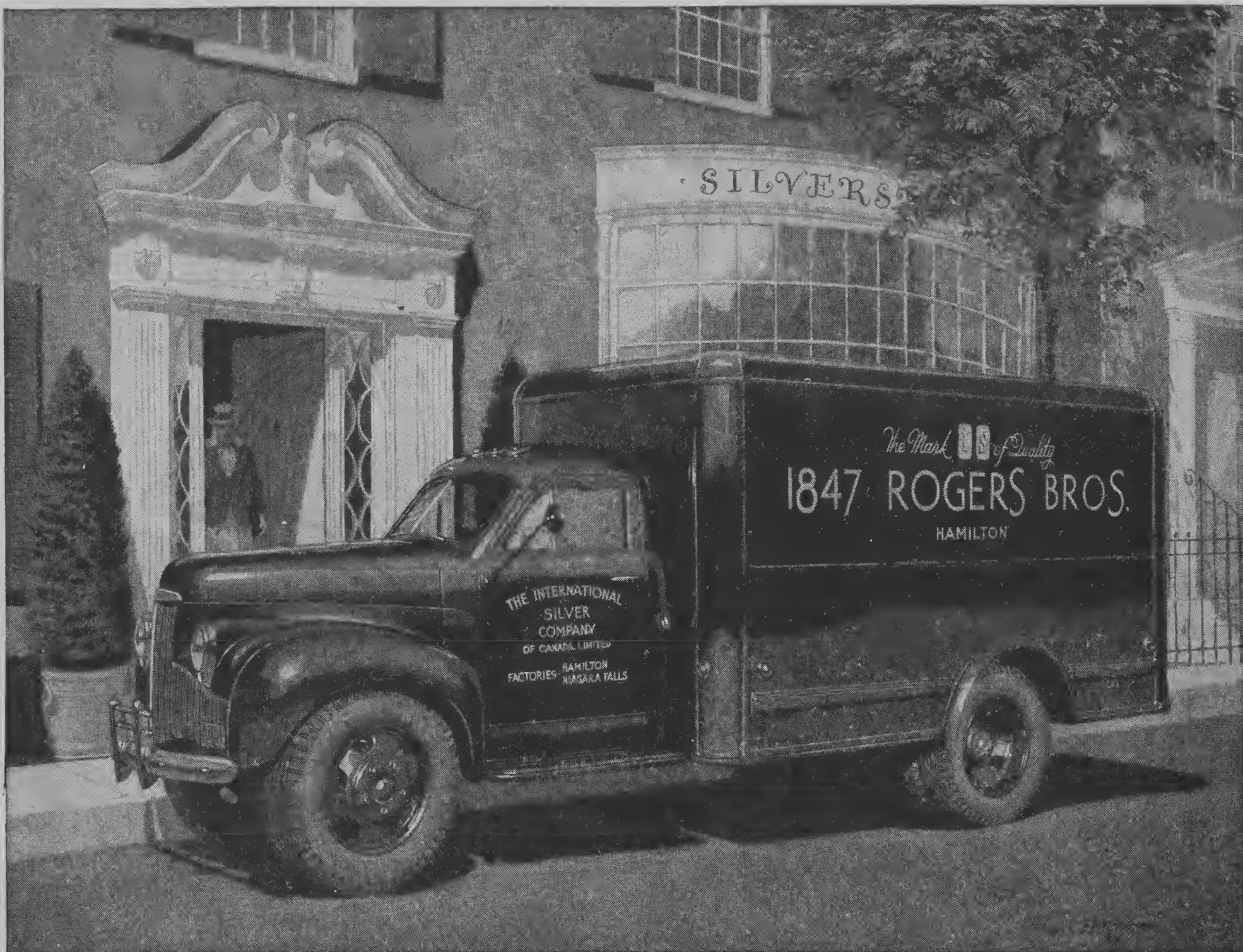
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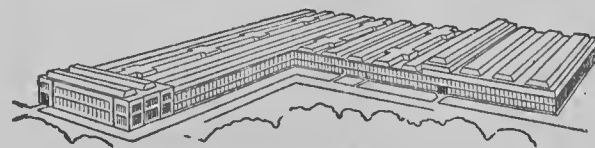
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A PIONEER BELIEF

By FRANKLIN J. HARRIS

EARLY settlers of the West on new lands with virgin soils enriched by the untold centuries of decaying organic matter, were likely to assume that high fertility was a condition that would continue for an indefinite period. As they viewed the virgin forests they were likely to think of them as inexhaustible. In fact, all of the natural resources seemed so plentiful that it was difficult to think of their being depleted. Doubtless, they considered talk about conservation as being entirely unnecessary. They were much more concerned about the development of the natural resources than about their conservation and protection.

Having spent most of my youth on the frontier where land was plentiful, where soil was fertile, where fuel and water were found in seemingly unlimited quantities, and where fish and game without limit could be had for the taking, I can readily understand the point of view of those who have little interest in all this talk about limiting grazing, about protecting the soil from erosion, about preserving the organic matter, about returning mineral elements that are removed by crops, about tillage practices that preserve a desirable structure in the soil, about conserving soil moisture and the hundred and one other principles and practices which promote high productivity in the soil and at the same time conserve for future generations a continuing productivity.

If I knew nothing except the experiences of my youth in the abundance of new lands, I might with clear conscience join those who question the necessity for conservation. I might be content to dwell in the fool's paradise with those who say, "Let us eat, drink, and be merry for tomorrow we die." Unfortunately, however, the experience of later years has shown that the abundance of the frontier cannot forever be recklessly dissipated without thought of tomorrow. Eventually a day of reckoning will come.

This idea has been brought very forcibly to my attention during the past 20 years when rather frequent and extensive travel has taken me to most of the countries where thousands of years of continuous dwelling on the land have written their results in bold and unmistakable characters.

In some of these places I have found nothing but scars, and ugliness and the ashes of burned-out civilizations; in other places I have found the beauty, the security, and the enduring prosperity that follow the proper conservation and utilization of the natural resources.

Let us for a few minutes look over some of the far-away lands which it has been my good fortune to scrutinize rather thoroughly during the past year. They include Babylon,

Nineveh, and Tyre, and the lands of Egypt, Palestine, Syria, and Greece as well as a number of their neighbors. We might also journey to the countries of the Far East which have been observed a number of times during earlier visits.

Indeed it is in the Far East, in China, where we have one of the best known examples of the removal of forests and other natural coverings, so that the land is left naked to the denuding action of rain,

wind, and flood. One cannot travel in that vast country without being continually impressed by the destructibility of the naked earth as compared with the permanence of the soil which is protected by a cover of vegetation.

ON the other hand, although chargeable with having abused its lands, China has also learned many lessons in conserving the fertility of the soil in fields of the individual farmer. Throughout the ages this country has lacked ability to carry on large projects for the combined good of all, but its individual citizens have developed much skill in making the most of the few acres which they have to till. The virgin forests have largely been cut down and the great rivers have been allowed to do untold harm by their unchecked floods, but at the same time the individual farmer has been industrious and skilful in managing his small tract of land.

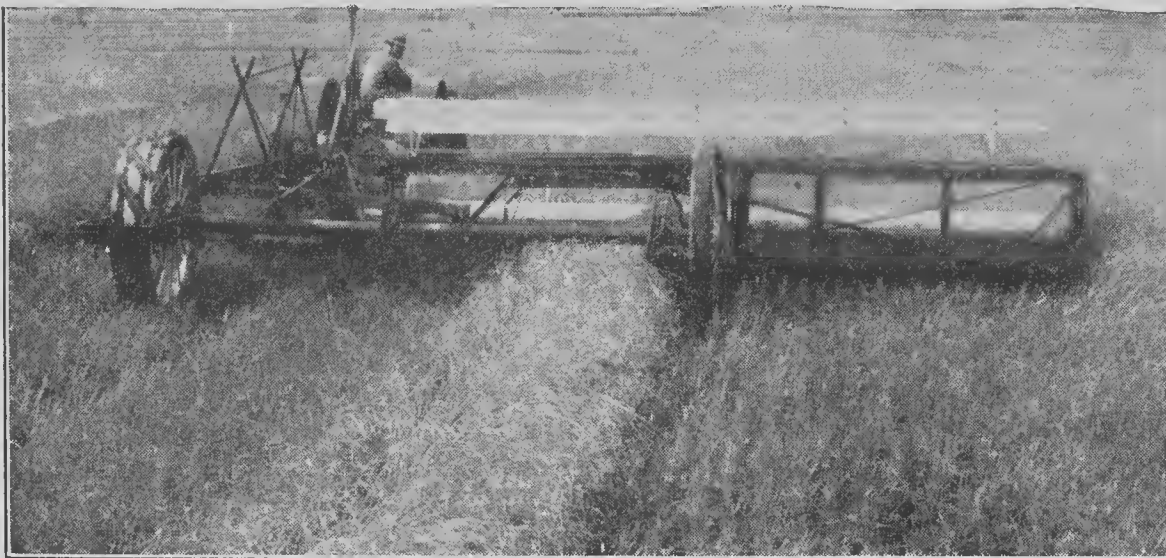
China illustrates the fact that true conservation is more than an individual matter. Public agencies must be marshalled to cope with the large problems and to protect the general interests in addition to the precaution that might be taken by the individual members of the community.

I was very much impressed while travelling in Korea, a few years ago, by the excellent program of re-forestation being conducted there by the government. I was a guest of the Japanese governor-general, Viscount Saito, who showed me the comprehensive plans of restoring the forest covering that had been removed by generations of wasteful timber cutting. In the hills I saw tens of thousands of workmen planting young trees on slopes which had been denuded by destructive erosion. In Japan I had already seen vast areas that were being conserved by scientific forest management.

In four areas, not very widely separated, one can see great contrasts. North of China across the Amur River in Siberia, one sees extensive forests that have never been disturbed by the axe. Not far to the south in the older country, one finds areas where the forests have been entirely destroyed and ruinous erosion proceeds unchecked. In neighboring Korea, one sees areas that are in the first stages of restoration. Lastly, only a short distance to the east in Japan, one finds large tracts in a well-ordered and profitable balance in which older trees are being profitably harvested while their place is filled with young trees. Heavy rainfall which in the one region is a source of constant damage, is, under the balanced conservation program, so controlled that it furnishes hydro-electric power and it also serves to irrigate rice paddies on hillsides that would be only gullies if there were no protective covering of vegetation.

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Will This Inevitably



Lead To This?



At the right, above: One crop farming which lessens soil humus, and increases risks from drought and wind.

Below: Reclaiming wheat land ravaged by drought and wind at Cadillac, Sask.



Bob stayed for supper and the talk was all of pheasants and of the next day's hunting.

A guide who had his own way of sizing up a gun, dog or a man

"That's all right," Mr. Frame said. "I'll slow Mac down. He's rope broke. I put a six-foot rope on him, and the feeling of it keeps him reminded. After he's dragged that through the bayberries for an hour or two, he won't want to run his head off."

Bob was dubious. The pointer was taut and nervous. No rope would slow him down. Bob wondered why Mr. Frame had left Pal behind and brought an untried dog.

HE drove out with them to the camp where they would lodge, and helped unload the car. Mr. Frame insisted that he stop for supper. Bob stayed, and the talk was all of pheasants and of the next day's hunting. Mr. Frame laughed at Bob's scruples against killing hens.

"I've hunted with Charlie Merritt himself," he declared. "He couldn't tell a hen from a cock when I shot one, warden or no warden."

"Well, that's Charlie's business," Bob admitted. Mr. Frame had influence in Boston, so he could understand that Charlie might hesitate to prosecute the man.

"I've shot them with you, too."

"I wasn't a deputy warden then," Bob reminded him. "I'm sorry, but I don't want to have to come down on you."

Mr. Frame looked at him with shrewd, small eyes. "Don't," he advised. "You might want a recommendation with Mr. Thomas, you know." That was more like Mr. Frame's former arrogance. He asked: "Where do you look to find them in the morning? We won't be ready to start till eight or later." He explained to Chan Ford. "Bob will have our birds located by then. The pheasants roost at night in swamps to feed in the bayberry clumps across the heath. Bob will go out early and listen for the cocks to crow when they come out of the swamp. He'll mark them down for us. After that, all we have to do is go where he tells us, flush them out and shoot them."

Ford said good-humoredly: "You'll have to kill the birds. I don't expect to hit anything."

"Don't count on me," Mr. Frame warned him. "I'm trying out a new gun; got it specially for this trip."

After supper he produced the gun. It was English, an over-and-under, one of those perfectly balanced pieces which no gunner can handle without a lively pleasure; but it was a 12-gauge, and Mr. Frame, to Bob's knowledge, had always used a 20. A gunner does not change his gauges. Here was a new mystery.

When Bob came home, Kitty met him radiantly. "Bob, Mr. Thomas called up!" she cried. "I'm sure he's going to appoint you warden. He sounded so

friendly."

"Did he say so?"

"No, but he wanted to talk to you, wants you to call him at nine in the morning." She added, as though a little puzzled: "But he didn't sound so friendly after I told him you were guiding Mr. Frame. I had a feeling he didn't like that."

Bob grinned. "I'll call him," he said. Then he remembered his own puzzlement. "Mr. Frame's changed. More friendly, and he's brought a new dog, and a new gun."

"What's the other man like?"

"Seems all right. He knows Mrs. Frame, said she'd told him about me."

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BOB was sitting pretty, with Kitty on his knee; six months old Davy lay face down across Kitty's shoulder while she patted his back to aid digestion. The occasion was almost a celebration for Charlie Merritt, the local game warden, had resigned that day and Bob, now a deputy, hoped to get the permanent appointment.

"But we can't count on it," he warned Kitty. "I've passed the examination and I'm right up at the head of the list; but it's all up to Mr. Thomas, the chief warden. I telephoned Boston, but he's away and won't be back till next week."

"He'll have to give it to you," Kitty insisted.

The telephone rang. Bob reached for it. "Hello!" Then Kitty saw his expression change. "Oh, hello, Mr. Frame," he said. He frowned a little. "Why, I'm not sure Mr. Frame," he said doubtfully. . . . "Well, Charlie Merritt has resigned, and I'm hoping to get to be warden. . . . Why, yes, the camp's open and I guess you can use it. . . . Well, I could go out in the morning early and spot birds for you, unless the appointment comes through before. . . . Why, yes, there seems to be a lot of birds. . . . I guess it will be all right. . . . Yes, sir, I'll expect you."

He put up the telephone. "Mr. Frame wants to come shooting on the twenty-eighth. He's bringing another man with him. Wants me to locate birds for them."

"Is it Mrs. Frame he's bringing?"

Her tone was so crisp that Bob grinned. Mr. and Mrs. Frame had come down for the pheasant shooting two years ago, before Bob and Kitty were married, and Bob had guided Mrs. Frame. She was much younger than her husband. She asked Bob questions about himself, and he told her about his boat, and how he went after lobsters in the summer and scallops in the winter. She was so friendly that at last, almost defensively, he told her about Kitty. "We're going to be married this winter," he explained.

Mrs. Frame told him that Kitty was a lucky girl, and by the way she looked at Bob and laughed when she said this, she made the words mean more than they said. Bob told Kitty about Mrs. Frame afterward, so Kitty's tone had an edge now. Bob grinned and said: "No, it's a man he's bringing." He added doubtfully, "I'll have to watch Frame. He shoots a hen pheasant every chance he gets."

"He won't dare do that if you're warden!"

"I can't let him do it with me guiding him," Bob said. But Mr. Frame paid well, and Bob could use the money.

He had not yet heard from Mr. Thomas about that appointment when Mr. Frame's car stopped at the door an hour before sunset Sunday afternoon. There was another man in the front seat, and a pointer dog in the seat behind. Mr. Frame was a chunky little man whose face looked as though someone had

squeezed the chin up toward the brow while the face was still in a plastic stage. He was overbearing, with arrogance in his tone and the way he carried himself; but there was a shrewd sagacity behind his small eyes.

When Bob came out to the car, Mr. Frame made introductions; "This is Chan Ford, Mr. Ford's one of our vice-presidents; knows more about my business right now than I do. He's never shot pheasants. I promised him he could shoot his gun hot on them down here."

BOB shook hands with Chan Ford. "Mrs. Frame's told me about you," Ford assured Bob, in a friendly fashion. "She says you kept the air full of pheasants for her."

"She's a good shot," Bob commented. He told the other man: "I don't know as you'll shoot as many birds as you generally do, Mr. Frame. I'm hoping to get the warden's job, and I'm a deputy anyway, so I'll have to see that you don't go over your limit, or shoot any hens."

Mr. Frame chuckled. "Noble young man! I suppose you won't object if I shoot a cock or two for Chan? He won't find them easy to hit at first."

"I guess that will be all right,"

Bob admitted. He had not expected such an easy assent. It occurred to him that there was a change in Mr. Frame; a geniality not natural, an excessive friendliness.

He was surprised, too, to see the pointer in the car. In previous years Mr. Frame had always brought a setter named Pal. The setter was a good pheasant dog, wise enough to crowd the birds till they lay, bold enough to thread the tough thickets that would cut a pointer to pieces in half a day's hunting, clever enough to know the difference between a sound bird and a cripple. Mr. Frame sometimes boasted that Pal had never lost a crippled bird.

Bob asked Mr. Frame where Pal was. The other said: "He's getting old. This is Mac. I want to break Mac in on pheasants. He'll be a wonder at it, fast and far."

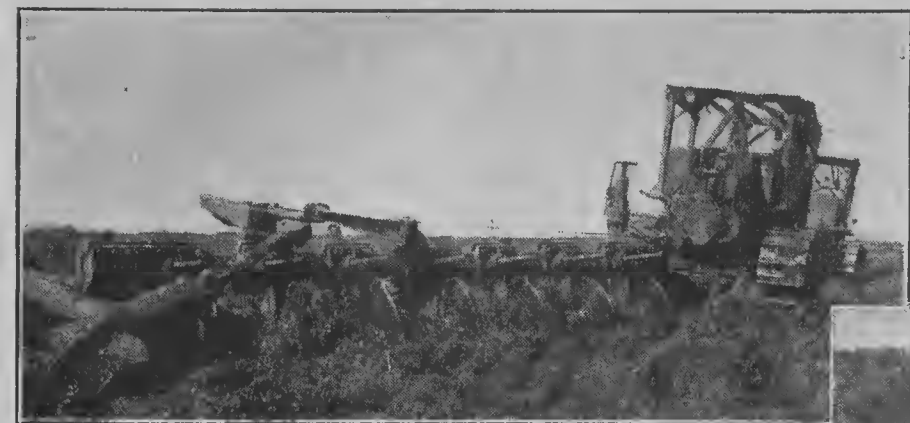
"Fast, is he?"

"Like a greyhound!"

"I don't know," Bob suggested. "A man tried a pointer, a fast pointer, down here last year. The dog lasted a day and a half; then he caved in and I heard he had to be put away. The briars cut him all to pieces."

by
BEN AMES WILLIAMS

Illustrated by
GEORGE ALBION



ON August 13, 1946, O. B. Lassiter, a farmer who grows grain extensively at Chin, in southern Alberta, put his John Hancock to a document which will father the most stupendous agricultural undertaking ever tackled in Canada by a private individual. When the work involved is completed he will have converted 140,000 acres of Peace River bush into crop land; he will have provided a flying start for 350 families of veterans; he will have carved out for himself a principality over which he may reign for seven years, after which it reverts to the crown.

O. B. Lassiter risks his shirt on the most daring farm gamble of our time, an epic in enterprise and organization

By P. M. ABEL

seven years paying the provincial government three and one-third per cent of all crop proceeds. After that this tract of land would settle another 60 families.

You can start an argument anywhere between the Saskatchewan and the Mackenzie as to the equitability of the Lassiter contract. On the one hand you will be told that it is an unwarranted grant of the public domain for private use; that Lassiter will hold a petty kingdom in fee and retire a wealthy man at the end of his tenants' bondage.

YOU are more likely to get that opinion in Edmonton. As you approach the scene of operations you will be told that Lassiter will be "bust flat" before the contract is half finished; that he has failed to take into account the terrific expenses totally unconnected with land clearing which he was bound to incur, to say nothing of unforeseen difficulties in the main business of clearing and breaking.

For instance, the first 10,000-acre block lies north of the town of Wanham. When Lassiter commenced operations there was a road for only one mile north of that town. Between the end of that road and the nearest furrow on the project there lay five miles of trackless bush, including a crossing of the Burnt River, a yawning 300-foot canyon. Heavy equipment and fragile bunk houses had to be hauled out to the site, which means that a road had to be built entirely at Lassiter's expense. O. B. put his whole crew on that job on December 3. By working a two-shift day of 24 hours, through 30 below temperatures, the road was completed two days before Christmas.

So deep and porous is the soil in the Peace that the local rivers dry up in early summer, and of sloughs there is no trace. The Burnt River, draining a million acres, is a ribbon of gravel by July in spite of its impressive gorge. The Lassiter pro-

The top pictures show one of Lassiter's 8½ ton plows breaking a strip 11 feet wide, and pulled by two D8s hitched tandem. Centre picture shows B. W. Archer, gang foreman, standing in the 12-inch furrow.

ject might have been located in the Sahara as far as surface water resources are concerned. So, after the road was completed, the big yellow Cats detached a hill from the place where nature left it and deposited it athwart the confluence of the Spirit River and the Burnt, impounding millions of gallons of water to form the only reserve of the area. Developments like these require money, for which no provision is made.

THE main undertaking of land clearing has been tackled in the spirit that made Lassiter a name in southern Alberta. He was the first man to bring a Diesel Cat into Alberta and he has been a pioneer in the realm of ideas ever since. When I first visited his farm at Chin in 1935 he was farming 25 sections. Visitors to that farm this spring could have seen one of his D8s trailing eight tiller-combines to seed a 2,500-acre barley crop in nine days!

Before putting a foot on the land, for Lassiter's first survey of the project was from the air, O. B. realized that its successful development would require the use of power on a scale hitherto unknown. Only the heaviest tractors built could be employed and new implements would have to be designed capable of utilizing their full power. No plow in existence could do the job. A new one would have to be brought into being which could plow 100 acres a day and slice through spruce roots without a tremor. Similarly throughout the whole range of implements used. A very formidable undertaking in these days of steel shortage and high manufacturing costs.

O. B. set about assembling a fleet of Cats which now numbers 13 D8s and one D4, and which he will double as fast as opportunity presents itself. You don't collect a fleet like that by writing a polite letter and attaching a cheque. Lassiter literally scoured the world for them. Most of them were eventually salvaged from American army dumps in the Aleutian Islands—left there to die after a lifetime of ill usage. Some of them cost \$4,000 to repair, and the D8s stand him at \$13,000 apiece landed on the project.

The plow in use spells Lassiter in every feature, although credit for embodying his idea goes to the Hoover Manufacturing Company of Edmonton, whose co-operation through these early

months has been of the highest order. Its total weight is eight and a half tons. Seven discs cut a swath up to 11 feet wide and it can be put down 16 inches into the ground, although the aim is to plow about a foot deep. Lassiter's experience on the flat Lethbridge plains led him to expect that D8s with their 113 draw bar horsepower could pull such a plow. But he did not allow for the many short steep pitches abounding in the north. These require two Cats to provide the necessary reserve of power. O. B. is now devising four disc plows with 42-inch discs which can be handled in the north by one big tractor and which will be more flexible than the wide plows.

The big Cats will handle 14-foot brush cutters for such timber as one encounters on this project. Mr. Lassiter has utilized one idea which enhances their effectiveness. Along

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LASSITER LONGSHOT



Typical burned over Peace River bush with one of Lassiter's brush cutters, powered by a D8, cutting a swath towards the camera.

Trouble-Shooting Tillage Machinery

NEW tillage implements, snapped up by farmers all over the West as soon as they are available, are designed to do a good job of summerfallowing, or preparation of a seed bed on almost any soil. Seldom, however, are they adjusted properly to do the best work under individual soil or weed conditions. While manufacturers do much to aid users of their machinery, a variety of tests has shown that many operators have much to learn about proper adjustment of their farming equipment.

In the three prairie provinces a real need is met by the holding of farm machinery field days, where farmers can learn proper adjustment of their tillage machinery. The extension services of the provincial departments of agriculture in Alberta and in Manitoba send out the men who make the demonstrations in those provinces. In Saskatchewan this work is directed by the Extension Department of the University of Saskatchewan.

More than 40 of these field days have been held in Manitoba this summer. One was held in May, 36 in June, and five in early July. According to George Bryce, farm mechanics specialist of the Extension Service, Winnipeg, the requests for field days have been so numerous that two circuits have been held for the first time. His associate, E. J. McFadden, with an assistant, Art Dixon, of Hamiota, has attended the field days scheduled for one circuit, while Mr. Bryce and his helper, Garnet Maynard, Dauphin, made the demonstrations on the other circuit.

Harvest machinery field days were initiated last year, and proved very popular. The aim in these field days, said Mr. Bryce, is to improve knowledge of harvest machinery adjustment, with a view to ensuring relatively trouble-free harvesting. Binder, threshing machine, combine, and swather adjustments are discussed.

A local agricultural society or crop improvement club, or some other agricultural group usually fosters the farm machinery field day. It contacts the local agricultural representative, who lets the extension department know how many field days are wanted in his territory. If there is no agricultural representative in the district, the sponsoring organization writes direct to the extension department at the legislative buildings, in Winnipeg.

"Usually 80 or more persons attend the field days," Mr. Bryce said. "At Hamiota this year there were about 250, and at Grandview, 300. At Ashville 125 were on hand. We use a loud speaker when there is

a large crowd, or wind interference. Usually we fence off the machine being demonstrated, so everyone can see."

At the demonstrations the principles of hitching of all types of tillage machines are emphasized, with a view to decreasing draft and improving the quality of tillage, Mr. Bryce explained. A dynamometer, which tests the number of pounds pull exerted by each machine, is standard equipment taken on these trips. Tests made before and after adjustment give some indication of the reduced power required when hitches conform to scientific principles.

CHOICE of machinery to be used at the demonstrations, and type of soil in which the tests will be made are left to the discretion of the sponsors. If it is a big grain growing district where one-ways are popular, as many as five or six of these may be in

**In the age of power equipment
correct adjustment means economy
and better work**

the field, and perhaps one moldboard plow—or perhaps none at all. In outlying districts, on the other hand, all the plows may be of the moldboard type, although there always is some interest in one-ways, even in these areas. No horses nor machinery designed for horse operation were at any field day this year or last.

In a district where a good deal of haying is done, adjustments of the mower are discussed, and one or two of these implements are on hand for demonstration purposes. Many farmers in such areas have a good many questions to ask about new haying methods.

Combinations of implements such as shown at the top of the page require special attention to draft. The big disk, shown below must be accurately aligned.

"The most frequent adjustment we find it necessary to make," Mr. Bryce said, "is to get a straight line pull from the centre of pull of the machine to the centre of pull of the tractor. Improper adjustment causes excessive draft, and because the implement cannot run straight an imperfect tillage job is done."

Another cause of unsatisfactory operation frequently found, particularly in the case of one-way discs, is incorrect angle of wheel travel. Sometimes the furrow wheel is on the wrong way. When seeding with a drill box on the one-way this may be permissible, but even here it is more satisfactory to equip the wheel with an extension.

There also is a common fault in the adjustment of a one-way which sets the angle of the rear wheel. This adjustment is made on most of these implements by setting the set screw against the rear axle. As years go by, wear gradually causes the rear wheel to move out of place. If it is not re-set the tendency is for the machine to go out of adjustment.

"The dynamometer tests at these field days bring out many interesting facts," Mr. Bryce declared. "For example, they show that the one-way is a cheaper method of turning soil than the moldboard plow. This is chiefly due to its rolling action, contrasted to the sliding action of the moldboard."

"The tests show that rubber tires reduce the draft of tillage implements about 20 per cent, as compared with steel wheels. Shallow tillage requires much less draft than deep cultivation, and the draft in heavy soils is considerably greater than in light soils. Tractors equipped with rubber develop about 15 to 25 per cent more horsepower for transmission to the drawbar, compared with the same tractor with steel wheels."

TRACTOR slippage tests usually form a part of these field days. They are helpful in ascertaining whether or not the tractor is delivering its power to the best advantage. Because these slippage tests are so easily made, every power farmer is encouraged to make frequent use of them in his own fields.

In conducting the test an easily distinguishable mark is made on the rear tire (or steel rim) of the tractor. Without pulling a load it is set in motion at working speed. As the wheel turns, a mark on the ground indicates where the mark on the tire or wheel came nearest the soil. Five revolutions of the tractor wheel then are counted, and a second mark

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By J. T. EWING

CROPS FROM CACTUS LAND

By H. S. FRY

How one farm, on submarginal, blow-out soil, produces good crops with little rainfall

IT is an interesting speculation to wonder what kind of community would result if a hundred of the best farmers in the three prairie provinces were located together in a separate community. What kind of community would it be? What kind of schools and churches would result?

Assuming that such a community would be more prosperous than others, would it be a co-operative community in the sense that it would develop a community spirit? Would land values be higher by reason of better farming? Would farm life be more attractive? . . . farm production more diversified? . . . hours of work shortened? . . . roads improved, or weeds brought under control? Would children go longer to school, or farm buildings be painted and modernized? How many of these farms would raise purebred livestock or grow registered seed, or be protected by good shelterbelts and have well-cared-for fruit and vegetable gardens?

The answer to some of these questions, of course, would depend on where the community was located, and the answer to some of the others on whether or not an outstanding farmer is, or is not, as a rule, an individualist. Personally, I am certain of only two answers. First, that these outstanding farmers would soon find the type of farming best adapted to the district, and promptly conform to it; and second, that even if located in the drought area, the community would either be reasonably prosperous, or it would dissolve and go somewhere else.

Some of these men would have very little education, and most of them would regret the fact. By no means all would be Canadian born—probably a relatively small percentage. The remainder would include quite a number who were American born, a fair sprinkling from the Scandinavian countries, quite a number from England, Scotland or Wales, and the occasional one from central Europe. The majority would be around 50 years of age, and their individual farms would be larger than the average.

Well, day-dreaming is of little use. But I have sometimes thought what a pity it is that the methods of the more successful farmers cannot be, or are not, more freely copied by the majority. The development of a fully productive, prosperous agriculture should be one of the principal projects of the people of any country; and it is reasonable to believe that the putting into practice, by a farm operator, of methods found most successful by outstanding farmers, should be one of the best ways of bringing this about. This point is not original with me, because it has been the

corner stone of hope and of practice by our universities and departments of agriculture for many years. Indeed, it was on this basis exactly that the Dominion Experimental Farms Service has founded its widespread system of illustration stations.

THESE and similar thoughts have been running through my mind ever since I visited "one" of these Dominion Illustration Stations, operated by Levee Bros., just north of Radville in Saskatchewan. My attention had been called to this farm some time before, principally because of the operators' success and it was only after my arrival that I discovered it was a Dominion Illustration Station. Mr. Glenn Levee, with whom I spent several very profitable hours, would have an assured place in that imaginary community of successful farmers to which reference has been made.

Left fatherless at the age of 13, he grew up with only a limited education—an unfortunate circumstance which he informed me had stopped his progress on at least three occasions during his lifetime—and for a number of years, until about 1924, continued to fill a place working on the farm with his stepfather. About this time he felt the urge which comes to every young man of ambition, to get out on his own, and bought the half-section of land lying east of the home half. What is worth noting is that he bought it at a tax sale for \$1,200, knowing that it had once sold for \$6,000 and had been abandoned after about 10 years' operation. What is especially worth noting, is that this was "blowout" soil (about which more later). It is sufficient to say here that the soil would have very little to commend it to a farmer on the Regina plains, or any other good farming district in any of the three prairie provinces. I feel quite safe in saying too, that it is seldom farmed successfully, and only rarely as successfully as Glen Levee has learned to farm it.

The time came when Levee Bros. took over the

quarter, this year seeded to Rescue wheat, and immediately next to it he showed me unbroken "blowout" cactus-covered prairie of exactly the same kind. The gist of the matter is that on this sub-marginal land Mr. Levee has taken off as much as 100 bushels of oats per acre, 70 bushels of barley, and 52 bushels of wheat. Off the quarter during the last seven years he has harvested a combined total of more than 19,000 bushels of grain, including wheat, oats and barley, and off the half section which he himself originally bought, he has taken off in six years (it was all fallowed one year) more than 38,000 bushels of grain.

Now this is impressive enough, but an average of 20.1 bushels of grain per acre for each acre of three quarter-sections for six and seven-year periods, must have been secured by some unusually successful methods on sub-marginal land of this kind. It may be argued that western Canada has just enjoyed a period of good crop years, and that this yield may not be so remarkable after all. Nevertheless, I do not mind hazarding a guess that Mr. Levee is probably able to produce, bushel for bushel, based on the amount of precipitation between April 15 and July 15 each year, at least the equivalent of the amount produced by anyone else on similar soil in western Canada.

I am not able to complete the following illustration for lack of the 1946 precipitation figure, but it is sufficiently complete to illustrate my point. Mr. Levee told me that in August, 1944, the rainfall was 6.08 inches. There was no further rain all that fall. Winter snow is variable, but generally not very heavy. In 1945, the amount of rainfall between April 15 and July 15 was 2.5 inches or less. (The average for this period over a long number of years is 5.51 inches at Radville). For the same period in 1947, rainfall had amounted to 4.47 inches. Even allowing for average rainfall in 1946 (the figure I do not have) no one can argue that the total precipitation since, and including August, 1944, has been heavy, or even good. Nevertheless, in 1945, Levee Bros. had a crop of 35 bushels per acre. In 1946 the crop was 30 bushels per acre. The 1947 crop was, of course, not yet harvested. When I saw it, it had been shrivelled by hot weather, including three days of intense heat, and there was more to follow after I left. "If we

could only have secured one more inch of rain to bring the precipitation up to the average, it would have made a big difference in this crop," said Mr. Levee. The stand was there, but the heads could not fill for lack of that additional moisture to bring the crop through.

In any case, the production from this well-managed, blow-out, sub-marginal soil has been remarkable, especially in the face of small water supply. I asked Mr. Levee how he did it, and I am not sure that he was satisfied with his reply. I am not even sure that he knows exactly. His soil is not

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Top: Unbroken, cactus-ridden, blowout soil, lying immediately next to the quarter-section mentioned in the article.

Bottom: G. R. Levee examines his crop after a spell of extreme heat.



[Guide photos.]

home farm, the exact date of which I do not recall. In any case, it was in 1924, also, that J. G. Taggart, then superintendent of the Dominion Experimental Station at Swift Current, selected a quarter lying immediately across the highway from the home farm, as an extreme example of "blowout" soil. Perhaps it was at this time that the Levee farm was made a Dominion Illustration Station, now under the supervision of the Dominion Experimental Farm at Indian Head. At any rate, Mr. Levee took me around the



GREEN GRASS

WYOMING

PART THREE OF A SERIAL

THUNDERHEAD brought his band back across the plains, heading for shelter from the blizzard in the strange tortured hill formations of the Buttes.

Thunderhead's band now numbered fourteen. There were ten mares and three colts aged two or three months. The colts belonged to three of the mares he had brought from the valley with him, a bay and a sorrel and the large black mare Ken had named Hagar.

These mares had also had yearlings, but when the new foals came Thunderhead had driven the yearlings out of the band.

It is the common law of horsemanship that when a mare drops a foal the yearling running at her side must be banished. One is enough for her to nurse and care for. The stallion sees to it and drives them away. At first they try desperately to get back and the struggle continues for days. They cannot conceive of life, separated from their dams. Eventually, bitten and bleeding and scarred, they accept their first serious defeat and stand at a distance in woe-begone postures with heads hanging, eyes turned wistfully back toward the herd. But soon comes consolation, for they band together in their affliction. Often permanent attachments are formed. They learn a new and independent way of life, find their own food and shelter, and glorious fun begins.

But Hagar's yearling, who was the Albino's only white colt, could not adjust himself to this fate. There must have been in him, together with his white coat and his magnificent conformation, the same stubbornness and wilfulness that had characterized his sire. Thunderhead had driven him away with the other yearlings, but he returned and clung to the mares as close as he dared, half a mile or so away. So he truly deserved the name Ken had given him, Ishmael, driven out of his own band and yet without the companionship of any other. Now and then Thunderhead made a sortie to drive him farther off and, if he could catch up with him, punish him for his presumption. Then would Ishmael's long slim white legs—as strong as Thunderhead's—take him floating off over the prairie to a safer distance, and Thunderhead would return to his duties.

Thunderhead's lead mare was a dry, a rangy black named Lady Godiva who had once belonged to the owner of the Steamboat Springs daily paper.

There were the two handsome brown Morgan mares which Thunderhead had stolen from Jeff Stevens. These were also dry. There was a pair of beautiful two-year-olds, stolen from who knows where, not fully grown, one a pale honey color, one a warm russet, quite chunky. Evidently they had Palomino blood in them. These would have their first foals the following spring.

There was Jenny, Daley's mare.

And there was Jewel.

Jewel alone of all the band had no warm coat of fur. Her hair was short, close, glossy from much graining, and her hide was thin. She had never experienced snow, let alone a blizzard. All her winter nights had been spent in her comfortable box stall in the Beckwith stables. During the mild spring and summer and fall nights she had browsed and drowsed in one of the small fenced pastures. She had never had to fight against a stiff wind. Now she was beaten upon by a blinding white blizzard that bewildered her, burned her eyes, and struck its fingers of ice into the very marrow of her bones.

ALREADY, within her, the supernaturally intelligent mechanism of her body was hastening to repair the deficiency. The signals had been given. But it took a little time. In a week the lengthening hair would be visible. Meanwhile, she was an object of half-frozen misery if she ceased moving even for a moment.

But Thunderhead kept them all moving. He was

Spring comes in the grasslands and Carey returns to Goose Bar ranch for a visit

sometimes ahead, leading them, sometimes behind, driving them. To Jewel he was as much a part of the horror as the cold. She veered away from him when he was near her. She had several sore spots in her haunches that would be bleeding now were it not that they were frozen. Occasionally she felt that the stallion was the whole trouble. If she could only get away from him and these mares all the other troubles would vanish too and she might find herself in the padded crate warm and snug again with Collins' familiar voice coming to her, his firm, accustomed hands smoothing her neck, tying the bag of oats on her head, petting her while the stream of delicious heat and strength poured down her gullet and gradually filled her with new life. Yes—escape! That was what she wanted! More than once, with this idea, she broke away from the herd and dashed off at an angle. But fast as she was, Thunderhead was faster, and in a moment she would be screaming with terror of the white monster behind her who drove his cruel teeth into her rump. More sore places now. More even than his teeth she feared himself and would swing away from him and find then that he had calculated on that, and that she was once again in the band of mares, going along obediently with them. But there was no peace for her with the mares either. One and all of them bit at her, shouldered her, swung their haunches and kicked her.

So she ran out to one side of the band and galloped there alone.

Jenny was being hazed, too.

NEWCOMERS in a band of horses are always persecuted exactly like the new children at school. The newcomer has to prove himself and win his way. At last he is accepted. Jewel and Jenny were "new girls."

The three foals ran close under the sides of their dams, as well able, in spite of the short time they had been on the earth, to bear up under the cold and wind as their dams; perhaps better, because the mares had to rustle for their feed. A colt need only to thrust its nose under its dam's belly if she should pause for so much as a half-minute. Moreover, food came warmed exactly to the colt's needs, whereas the mare had to paw up the snow and eat the dry cold grass beneath it.

Long icicles hung from their nostrils and lips, their bodies were encrusted with white, only the manes and tails were dark. These, moving constantly in the wind, were kept free from snow.

Suddenly the wind seemed to drop. Thunderhead slackened speed, the band stopped running and stood grouped in the lee of a high ridge of ground, one of the Buttes. Here was shelter. This was what Thunderhead had been leading them to. The colts immediately began to nurse. The mares were thirsty and ate snow. Thunderhead himself pawed the snow and disclosed, under the cliff, a good-sized patch of green buffalo grass, sub-irrigated. The mares crowded to it and ate ravenously. Jewel tried to do the same, but the mares kicked her out. Frightened and forlorn she moved to a safer distance and stood there, taut and humped in the icy wind and snow that curled over the peak of the ridge and just caught her where she was. But she dared not return. To freeze was better than to be kicked and bitten.

The night wore on. Vitality died down in Jewel. Her legs did not hold her up very well but seemed to bend. Her head hung very low.

The scent came to her on one of the currents of wind that whirled around the ridge. It was a warm scent, a horse scent, and a friendly scent. Oh, better than that! It was the scent of a champion, a refuge, a god! It was the big Clyde, the gentle mon-

ster with the brown eyes and the heavy, black forelock. It was the scent of Pete!

Jewel raised her head as if she had received new life. A wild nicker of recognition burst from her. Every mare and the stallion, too, turned and looked.

Something off there in the whiteness! A huge, bulky shape standing, a little timid, a little humble in the presence of the stallion as every gelded creature must be timid and humble in the presence of the un-

altered male. Jewel fled toward him and in spite of his knowledge of the danger an answering whinny rumbled up out of his deep throat.

Jewel reached him and flung herself against him. They pressed their faces together, their nostrils touched and clung. Pete's deep, tender rumblings continued.

At that moment the stallion fell upon him, reared and pawed him, bit him, and whirled to lash out with his murderous heels. But Pete was not there to receive the blow. He had faded off into the impenetrable whiteness. Not a sound—not a rumble more came from him. Jewel felt a vicious nip on her withers and fled back to the mares. They presented their haunches and kicked her out of the herd.

Again she found her cold and lonely place on the outside and took her stand there.

A half hour passed. Then again that warm, friendly smell of Pete! Again the irrepressible nicker burst from her and she dashed off to meet him. Again the stallion pursued. But this time Pete waited only for one touch of his nostrils to hers, one deep whinny—a promise not to desert her—then whirled and pounced away, his great hoofs shaking the earth.

Jewel went meekly back to her place and Thunderhead returned to his frantic chopping of the buffalo grass with his thick, white teeth, feeding voraciously, needing the nourishment and heat that comes from it to maintain his strength and vigilance and the fire of his stallion-kingliness.

The next time Jewel smelled Pete she did not whinny nor run out to him. She raised her head and looked through the driving snow to that spot of looming darkness. He came nearer but not too near, and warily, casually, as it were, began to paw the grass and nose beneath it for food.

He did not fool Thunderhead. The stallion's ears were flattened even though his head still hung low over the grass and he continued to eat, but he was alert to every move Pete made. Then his ears relaxed. He gave over being concerned and concentrated on his feeding.

Jewel too began to paw the grass and nose underneath it for food. Her grazing brought her nearer to Pete. He stood in an unsheltered place taking the full force of the wind and snow. Step by step she approached him, at last ceased any pretense of grazing, moved close and placed herself against his towering bulk as a colt is close under its mother's side. She felt the heat of his great body and was comforted. He did not waver, but stood staunchly, the blizzard beating upon his windward side and coating it with ice.

The snow with which Jewel was encrusted was gradually melted and dripped off. The heat from the gelding's body penetrated her own. It was delicious. She was safe. She began to drowse.

Crown Jewel might not have survived that first blizzard had it not been for Pete. In all the storms of the hard winter which she spent with Thunderhead's band on the plains between the Buttes and the Snowy Range, Pete was her protector.

As soon as the first blizzard had ended and also the terrible ground blizzard which followed it, Thunderhead led them south into the open. Here, ground would be bare of snow because of the wind which incessantly swept it. There would be grass, dry and brown but extremely nourishing. There would be shelter enough and water enough in the little draws and depressions of the plains.

Elk and antelope and deer were on these plains for the same reason. Jewel was a comical picture of surprise when she first lifted her head from her grazing and saw, not very far off, a group of these strangely shaped animals sharing her pasture. But it soon came to be a natural and a pleasant thing. Occasionally, moved by irrepressible curiosity, she approached them tentatively. Sometimes, equally curious, they

by
MARY O'HARA

Illustrated by
CLARENCE TILLENUS

would come hesitantly to meet her and stand at a little distance, staring, stamp a hoof nervously, whirl away, run for a few seconds, then calm down and begin grazing again.

Sometimes the deer and horses grazed together, paying no attention to each other.

On winter days of true Wyoming gloriousness, when the sun, in a cloudless sky of deepest blue, blazed down through crystal air and poured its heat and energy into the horses like charges of electricity, Jewel was almost bereft of her senses with excitement and happiness. Nothing like this had ever been known by her before. She frolicked like a yearling. She bucked and frisked and tossed her head, stood on her hind legs and pawed at nothing.

The little group of yearlings a few miles away could easily be seen through the clear air. Jewel went flying off to make friends with them. Thunderhead, without even lifting his head kept an eye on all they did. Jewel returned. She always returned now. She had learned her lessons and got no more bites in her haunches. She no longer feared Thunderhead except for a seemly attention to his wishes. Once she found herself grazing close beside him. They moved slowly, almost keeping step, their sharp teeth jerking left, then right, another step, and with a full mouth, the stallion raised his head high tossing his eyes in a wide circle, a glance which took in every moving thing within a radius of many miles. *All's well*—and he lowered his head and again went step by step along with Jewel, their muzzles almost touching. He was not greedy. He willingly left her the good tuft of grass they were approaching. She came to feel a confidence in him. She knew that when he watched and stood guard, he stood guard for the whole herd.

BUT Pete was her true friend. He never entered the herd but accompanied it wherever it went, remaining always at the respectful distance of a few hundred yards. Most of the time Jewel was with him. Thunderhead had now accepted this friendship. In wintertime, when the mares are with foal, there is not so much to fear from an intruder. Besides, Pete was a gelding and not young, either. It is the young stallions a herd leader fears.

So the formation of horses was like a constellation. Thunderhead the central sun with the mares his close satellites. Pete and Jewel moving on an outer circle, Ishmael all alone on another ring, the yearlings on the farthest ring of all.

Still farther, but out of sight of this band, were other groups of horses, many of them the inbred small "wild" horses which are to be found in all the mountain states. But the centrifugal force emanating from Thunderhead and binding his constellation together did not reach to these others and they ranged free of his control.

Jewel was acquiring greater strength and health than she had ever had before. Her lungs deepened and gained in power. She grew taller, longer-legged. The luxuriant growth of her mane and tail and her thick fur made her look, at first glance, like a wild horse of the plains, but at second glance, there was that superb head of an English thoroughbred, the fine sensitive ears, and four most perfect black legs. The only white mark upon her was the diamond and pendant upon her forehead.

The winter was long. The mares grew thin, their bellies were low, there was a sag in their backbones.

The storms continued with lengthening periods of

good grazing weather between. Sometimes there was a day when the air was balmy.

As spring approached the snow melted quickly after storms.

Thunderhead changed his pasture constantly. He was approaching the foothills of the Snowy Range, country that was new to him. He investigated every rock, every hill, every little hollow, really surveying the land like an engineer, so that when he was leading his band, either for food or safety, he knew where to take them. If they had to be concealed, he knew draws in which they could be invisible to anything moving on the plains. He spotted each rise where he could stand and see the country for miles around. Wherever he went, his entire constellation went with him until one day when Jewel, looking for the yearlings, could not see them. They had drifted away to a farther range. The bond between them and the mother-herd was cut. But Ishmael, now a magnificent two-year-old, still clung to his orbit, still stood at night with his head turned and his ears pricked toward Thunderhead's band. Thunderhead eyed him with increasing disfavor. This could not be tolerated much longer. But Ishmael was fast on his feet, and Thunderhead knew it.

With the approach of spring, Thunderhead's temper became short. Stallions would soon be roaming. Spring would put wanderlust into their feet. They would be looking for mares.

SEX was awakening in him and brought its characteristic restlessness, pugnaciousness, suspiciousness, flaring temper. It was as if through the sexless wintertime, he had enjoyed a period of peace, his care of his herd having a quality of father-love and protection. Now he watched ceaselessly for rivals, for the scent of a mare to be found and bred and appropriated, for someone to pick a fight with.

He trotted around his mares, erect from his springy hoofs to his high, sharply pricked ears and uplifted tail. Savagely he drove the colts out of his herd. These were yearlings now. The forlorn youngsters went through the usual period of agony before they accepted defeat and formed their own little band a few miles from the mother-herd.

For hours at a time, Thunderhead stood in his high point of vantage, looking for trouble. No challenger came, but there was still Ishmael.

One day Thunderhead's anger crystalized. He shot out of the herd, a bolt of fury aimed at the white two-year-old. This time he would have his way and punish the youngster so he would never return. But

Ishmael knew beforehand just what was coming and was off and a mile away before Thunderhead had reached the spot where he had been.

From that day on Ishmael no longer clung close to the mother-herd but neither did he join the band of his fellows, nor any other band. He found a new range for himself, a range which had a high peak from which he could see Thunderhead's band of mares. If the wind were right, he could smell them; now and then, he could get the whiff, or at least the sense, of his dam. This was all of life for him. Here he was safe from Thunderhead, could watch, move as they moved, keep his distance, yet have them within sight.

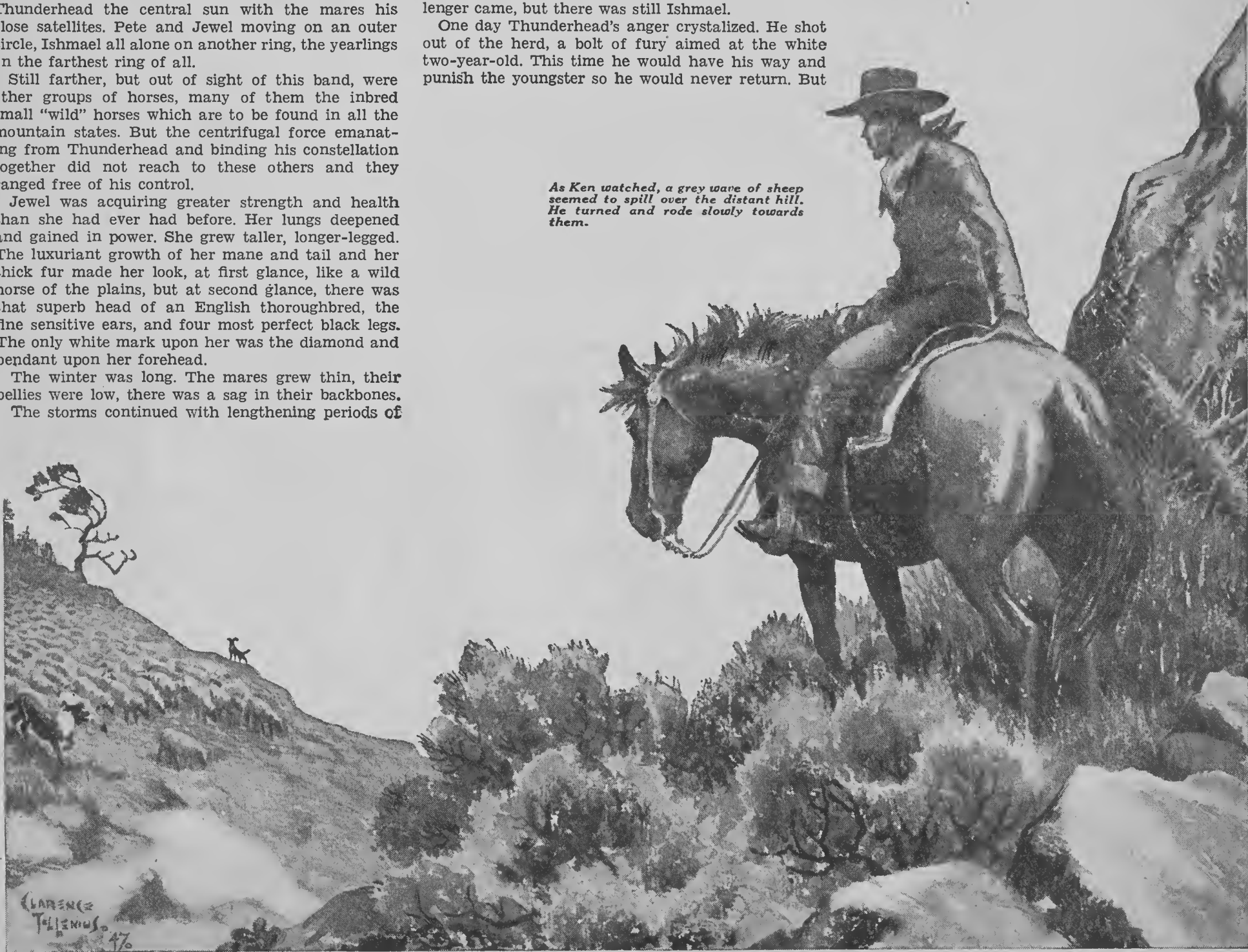
THERE came a day when Thunderhead, incessantly on the lookout and sniffing the messages brought on the wind, got notice of some mares in neighborhood, one newly foaled, open. He left his band and trotted away, his high-held muzzle undulating from side to side, playing with the scent, feeling it bathe his sensitive nostrils. His tail plumed, his feet stepped high.

When he returned with two mares, one with a foal at foot, Hagar had vanished. Well he knew what had happened. In his absence, Ishmael had swooped down on the herd and stolen his mother. Thunderhead's nose made a careful survey of Ishmael's hoof prints and of Hagar's. He pawed at these. Furious snorts rippled from his nostrils. He came upon a pile of dung. It still smoked. Thunderhead moved a step or two forward and covered it with his own. Then, following the scent with his nose, he went in pursuit.

When he came upon them he went first for the mare. A few vicious chops separated her from her son and turned her backward. Then Thunderhead snorted his challenge to Ishmael. Ishmael stood up to him and faced him bravely, twenty feet or so away. Thunderhead pawed the earth, raking up clouds of dust. Ishmael did the same. His proud young chest lifted, his chin was dragged back and in, he seemed to swell. He had never fought before. Thunderhead lifted a foot and took a step forward, Ishmael did likewise. They neared each other slowly, deliberately, the breath coming loudly through the flaring nostrils of their drawn-in muzzles.

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As Ken watched, a grey wave of sheep seemed to spill over the distant hill. He turned and rode slowly towards them.



THE Country GUIDE

with which is Incorporated

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Reconstruction

The re-establishment of world trade after a global war is proving to be a matter of almost insuperable difficulty. Production is the key to trade. Many billions in loans and relief must continue to be poured into Europe, because the machinery of production, both agricultural and industrial, has been shattered by the war. Most European countries have been unable to balance imports with exports. For world trade to be resumed on a healthy, constructive basis, nations must be able to produce surpluses for sale, in order that these may be sold in world markets to pay for goods imported.

Today only a few countries are in a position to sell more than they need to buy. Of these, the wealthiest, largest and most industrialized is the United States. With a national income now running at the rate of 200 billion dollars per year, she is capable of producing enormously and has learned how to utilize her great capacity with a marvellous degree of efficiency. In this post-war period she sits astride the trade of the world like a colossus, with exports which, in 1947, will crowd the 20 billion dollar mark.

Unfortunately, European and other countries will not be able, in return, to sell to the United States goods worth more than seven or eight billion dollars. Consequently, the United States will be faced with a surplus of exports over imports, of about one billion dollars a month. Her customer countries must somehow find this amount of dollars, as long as they continue to buy from the United States at the present rate. How this is to be done is a world problem of the first magnitude.

Collectively, these countries have assets in dollars, gold and investments in the United States, sufficient, if they were all cashed in, to pay a billion dollars per month for perhaps another year and a half. These various assets, however, are not proportionately distributed among the countries needing them; and in any event, the complete liquidation of all such assets would make a future world dollar crisis not only inevitable, but so serious as to completely paralyze world trade. Such an event would create a serious depression in the United States itself, which wants normal exports of at least ten billion dollars per year. It would, at the same time, initiate a world collapse from which Europe might never recover. It would almost certainly breed another war, which might well be the war to end all wars.

This, then, is what is in the minds of the planners at Washington, who propose to aid foreign countries to the tune of perhaps 20 billion dollars. Aid will be by loans or gifts, in order that needy nations may regain their economic feet in sufficient time after World War II, to forestall a third world war, and permit the United Nations to organize a lasting peace. Whether called the Truman, or the Marshall Plan, it is an idea that will have wide appeal outside the United States. Congress may not approve of the entire scheme, but there can be little doubt that some constructive step in this direction must be taken shortly.

The Plight of Britain

Though never invaded in the war, Britain was bombed mercilessly. Nearly three-quarters of her total manpower was diverted from peacetime production to the war effort. For six long years she stood the strain, playing her full part wherever needed, and willing host to every free government of every war-torn European country.

When the shooting stopped and the war came to an end, Britain emerged greatly weakened financially. Her export trade, the very essence of her existence, had been cut by 71 per cent from the 1938 level. Such was the state of Europe that immediate relief was vitally necessary. In addition to contributing more than \$600 million to UNRRA, Britain reduced her own stocks of food and feed by 2.5 million tons. In July, 1946, she began to ration bread and flour, which had not been found necessary during the war. She has maintained more than a million men under arms; and extended credits to European countries to the extent of hundreds of millions of dollars. Britain took over the most difficult area of Germany, a costly responsibility involving the welfare of the 21 million population and two million displaced persons. Exclusive of the cost of the army of occupation, the occupation of Germany and Austria in 1946 cost her \$320 million dollars.

Britain has, to a substantial degree, sacrificed her own production in the interests of humanity and consequently missed an unexampled opportunity for the recovery of her export industries. Now her affairs have reached a condition of crisis, hastened by an agricultural disaster which affected the harvests of 1946 and 1947. She is again compelled to purchase more than \$500 million worth of imported foodstuffs.

To regain her former standard of living Britain needs 75 per cent more exports than in 1938. Today they are about equal to 1938. She gets over 40 per cent of her imports from North and South America, but the Western Hemisphere takes only 14 per cent of her exports. She needs dollars badly, and her favorable balance of trade with Europe is not convertible into dollars. Last year she asked the United States for a loan of five billion dollars and got 75 per cent of what she requested. Canada also lent her 1¼ billion. Both loans were calculated to last her until 1950, by which time it was hoped her trade and industries would be rehabilitated. The events of the last year have compelled Britain to draw heavily on both the United

States and Canadian loans; and the former may be completely exhausted by the end of this year. It is even now tentatively committed. She does not want to ask for another loan, and if she did, the year of a presidential election would be a bad time to do so.

Canada is now the third trading nation of the world. We are a country of vast area, with more than 12 million people and a net national debt of 13 billion dollars. Britain is a small island, with 45 million people and a debt of 103 billion dollars. Canada was neither invaded nor bombed in the war. We took no advantage of lend-lease and were able to make a magnificent contribution from our own resources. Britain was dependent on outside assistance for food, lend-lease and money.

For every reason, humanitarian, political and economic, Canada should stand ready to help Britain in her hour of trial. She is our closest relative, our most important market, and for a long period she was our protector in world affairs. Aside from all this, to use the famous words of Litvinoff, "Peace is indivisible." When and if Britain needs a further loan for her own delayed rehabilitation, let her come to us freely and confidently, with assurance of our assistance to the limit of our ability.

Embarrassing to Friends

There is a fairly large number of sincere and loyal Canadian citizens who have consistently counseled tolerance and patience with Russia as the only road to peace. Recent Russian moves in the Balkans should satisfy this group, if nothing else has, that the Soviet government has long since passed the bounds of purely defensive action in the realm of foreign affairs.

There has been a clear expression of opinion on the nature of the disturbances in Greece. By a vote of nine to two the Security Council found that her northern neighbors, all dominated by the Kremlin, had aided and abetted guerilla operations against established order on Greek soil. The same vote of the Security Council decided that a UN commission should be posted at the border to keep the peace. But this obviously necessary plan of action was defeated by Russia's exercise of the veto.

By this action the Russian government stands revealed in its true colors. Peter the Great has triumphed over Karl Marx. The revolution which was to have elevated the status of the submerged masses of Russia has placed in office



Preview.

a power group which makes foreign adventure its first concern. The aim of economic advancement has become a poor second to unashamed nationalistic aggression. The exponents of further appeasement for Russia are finding the ground crumbling under their feet. The confessed Communists abroad will have an increasingly difficult job to persuade people of other countries that they are the heralds of a happier social and economic order. They stand out for what they are, agents of a designing foreign power.

Hog Delivery Premium

Elsewhere in this issue, reference is made to a brief presented to the Government of Alberta by the Alberta Federation of Agriculture, the United Farmers of Alberta, the Alberta Farmers' Union and the Alberta Livestock Co-operative. These organizations are disturbed by the serious decline in Alberta hog marketings which has occurred since the peak year of 1944. They have asked the Provincial Government for a premium of two dollars per hog on all Grade A and B hogs marketed in the Province during the four months June to September, inclusive. The further suggestion was made that the cost of such a premium, estimated on the basis of 1945 marketings to amount to \$696,000, be borne equally by the government and the producers. The share of the producers would approximate one-sixth of a cent per pound, dressed weight, on all hogs marketed between October first and May thirtieth, the period of heaviest marketings.

The Alberta farm organizations hold that marketings in 1941 and 1945, each of these years approximating 1,950,000 hogs, are fair marks to shoot at. They represent about a million fewer hogs than were marketed in the peak year, but 700,000 more than were marketed in 1946 when the number fell to 1,250,602, a decline of 59 per cent from the peak. It is believed that the most serious decline has occurred in winter farrowings; and that this fact, taken in conjunction with the necessity for regular shipments to the British market, and the importance of hog production in the development of a sound and permanent agriculture in the Province, fully justifies the request.

In assessing this or any other similar proposal, it is essential that three considerations be borne in mind. The first is that subsidies, as such, are not generally desirable, and that farm organizations have been opposed to them in principle. Second is the role of price, since the function of price is to facilitate the exchange of products and, more specifically, to guide production by encouraging the producers of those products for which there is the strongest demand. Third is the fact that it is the function of government to further the welfare of all the governed, and to use its powers in support or encouragement of a single industry only if, by so doing, other segments of society will be helped thereby.

Present circumstances in hog marketing include a marked disparity in labor returns between grain and hogs, and a higher cost for winter-born litters as well as a long-time British bacon contract calling for regular marketings of high quality hogs at steady prices throughout the year. Neither the farmer nor his organizations have created these circumstances. Basic market conditions for Canadian hogs are provided by the Dominion Government, which not only negotiated the bacon contract, but supervises hog grading and provides a quality premium. It is the responsibility of the provinces to encourage a balanced agriculture within their borders and to supplement, where this seems in the interests of the Province as a whole, the overall scheme outlined by the Dominion. Viewed in this light there would seem to be considerable justification for the request made by the Alberta Federation of Agriculture and its associated farm organizations. It is to be hoped that Premier Manning and colleagues will give it the careful consideration to which it is entitled.

Under the PEACE TOWER

THE only talk you seem to hear in Ottawa these days is about money. Politics for once is forgotten, and the conversation sounds more like something you hear in a college class room, or on a stock exchange, than on Parliament Hill. The plain fact is there is a famine of Yankee dollars.

You can cut out all the high falutin' language by saying that Uncle Sam has all the money. Like the fellow in the poker game who holds all the chips, the lean fellow with the goatee has everything, the rest of us have nothing.

Britain's plight has been emphasized a great deal of late, and while it is once again, a separate problem, nevertheless, one way and another, it is bound to affect us. If the United Kingdom, haunted by the shortage of American dollars, changes her economy, and in some way manages to exclude us from some of her purchases, we may be affected more directly.

To me, however, our chief problem seems to be our own shortage of American dollars. To make things worse, we are getting even shorter and shorter of this much coveted currency, and they say that if we keep on spending the Yankee dollars the way we are, we shall run out of this money by the end of the year.

Let's crowd in a little closer to see what the trouble is. If somebody took a 1,000 dinar note into Yellow Grass, Saskatchewan, no one would cash it for him. There would be two reasons for this. First of all, no one would know how much a Yugoslav dinar was worth, even at par. Secondly, no one would know what it was worth now. What used to be considered good money is bad money nowadays. For instance, the reason the British pound has fallen so low is that it isn't worth very much these days. Go a bit further and you will find that Britain, after years and years of war, is impoverished; she is stripped of her assets. Her pound sterling isn't what it used to be, because it is not backed by what it used to be. A man who has a million dollars has no trouble cashing his cheques. But a man who has lost a lot of that million isn't quite such a good risk. People don't quite know what his cheques are worth. Thus today, the pound sterling, holding a certain nominal value, has an actual value below that. And by the same token, the Yugoslav dinar is of such little value that the only place you likely would get anything for it would be right in Yugoslavia. Yet there was a time that the dinar had value, and this writer remembers well walking into Thomas Cook's in London, back in 1938, and getting eight shillings for 100 dinars.

Now the plain truth is that these days, our money isn't worth what it used to be, and no one quite knows what the other fellow's money is worth. But we are sure what the Yankee dollar is worth. So we all want the Yankee dollar.

Meanwhile, two things are said to be in the offing. The first will be de-valuation of currencies inside frontiers. For example, if the pound were de-valued to \$2.50, some say it would be closer to its real value than it is now. Then if all the European countries on this side of Russia de-valued and thus re-valued their currencies, at least they would be sound. The inflation would be squeezed out of them as they went through the wringer of de-valuation.

Then the next thing to do would then be to make currencies inter-changeable. That, they say, is coming. As I understand it too, that is—or was—the real purpose of Bretton Woods. The ultimate effect of stabilizing currencies is that each currency will then have a value in

terms of the other. For instance, in Europe, the French franc might be fixed at 300 to the pound. The Italian lira might be 500 to the pound. I am taking random figures in round numbers. But whatever the value, at least the person would know where he stood. If he had Swedish crowns, he would know he had so much in pounds sterling, so much in German marks. And one would really be convertible into the other.

When and if that comes about, they say they will have a sterling bloc in Europe, and thus try to get along without the Yankee dollar. I am not going to discuss the virtues of a European sterling bloc. All I am trying to indicate is that at present, nobody knows what his own money is worth, let alone anybody else's. So we have inflation on the one hand, non-convertibility on the other.

We are however sure where the American dollar stands. What's more, we all want it. The American dollar won't buy what it used to buy, but at least it is backed by gold, it is backed by goods, it is backed by resources. Where the American dollar is backed by the riches of the United States, other people's money is backed only by hopes.

Canada of course is by no means badly off. But we do depend a great deal on American products. For instance, we have no substitute for Hollywood movies. We use American gasoline. When we want oranges, we get American oranges. The number of things we import is almost incredible. For instance, we are a paper producing country. Yet Laurie McKechnie, aggressive parliamentary correspondent for the Toronto Telegram, in thumbing through an official book, discovered we had imported some \$34,000 worth of toilet paper from the States in 1947! We have even imported junk from the Americans this year!

Meanwhile, our supply of American dollars, assiduously stored up during the war, is going. Experts think we cannot last very far into 1948. What then? Try as we might, we cannot sell the States as much as we buy from them. That brings us starkly face to face with the crisis. What can we do?

Many suggestions are brought forward. One is that we float a loan. But where does that get us? Ultimately we have to pay it back—with interest. We might close up our border, as we did during the war, and keep as many people as possible from going across; but that only breeds bad feelings.

Most people here seem to think we shall have to come to something akin to Britain's plan. That is, we shall have to cut down and in some instances cut out American imports. During the war, Wartime Prices and Trade Board prac-

Turn to page 75



PROFESSOR E. A. HARDY

University of Saskatchewan

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Professor E. A. Hardy

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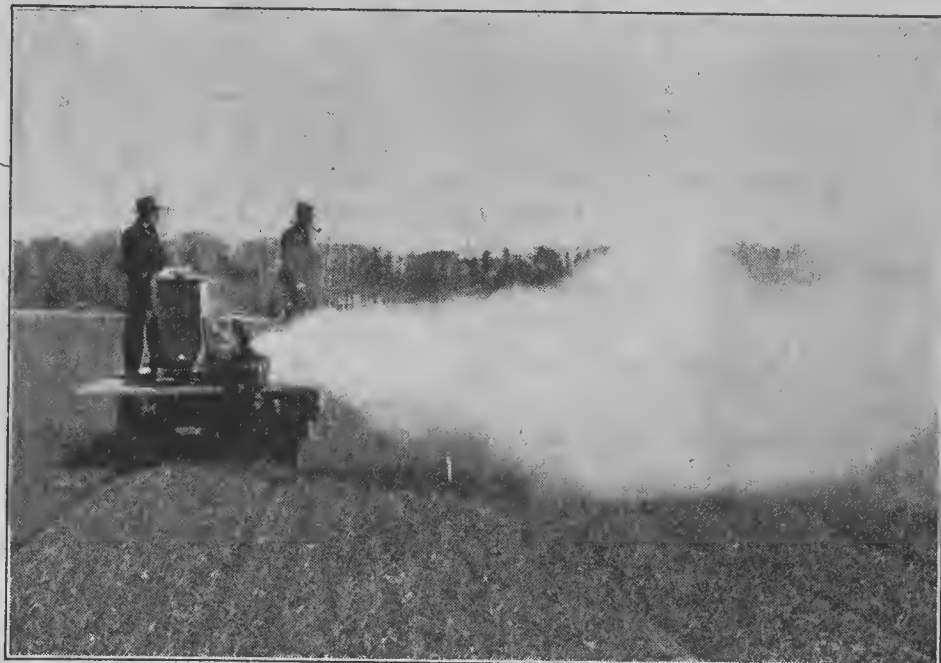
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Ask Summer Premium on Hogs

Alberta farm organizations disturbed by decline in hog marketings

ON August 13, a brief sponsored by the Alberta Federation of Agriculture and supported by the Alberta Farmers' Union, the Alberta Livestock Co-operative, and the United Farmers of Alberta, was presented to Premier Manning and members of the government of Alberta. The delegation was headed by Roy C. Marler, president of the Alberta Federation of Agriculture.

The brief called attention to the serious decline in hog marketing in Alberta since the peak year of 1944, when 2,981,940 hogs were marketed, as compared with 1,250,602 hogs marketed in Alberta last year. These figures compare with approximately 1,950,000 hogs marketed each of the years 1941 and 1945, which the Alberta farm organizations consider as a desirable peacetime objective.

Important also, in connection with the brief presented, is the fact that in 1944 a total of 766,283 hogs were marketed during the four months June to September inclusive. During this period in 1946, only 248,522 hogs were marketed, which was 140,000 fewer hogs than in any year since 1939, for this period.

Similarly illuminating are the figures for Grade A and B hogs marketed in 1945 and 1946. The decline in Grade A hogs marketed throughout 1946 as compared with 1945, was from 529,663 to 294,874. The corresponding decline in Grade B hogs was from 1,067,015 to 710,631. Especially significant are the comparative figures for the June to September periods of the last two years. Grade A hogs dropped from 118,671 in 1945 to 51,768 in 1946, while Grade B hogs for the same four-month periods declined from 229,119 to 135,151. It is true that the farm strike was on in September of 1946, and significantly affected the marketings of that month. It is also true however, that hog marketings in the three later months, October-December, 1946, were more than 81,000 fewer than in the same three months of 1945.

It is in the light of these and other circumstances that the Alberta farm organizations appeared before the government and presented a brief from which the following has been excerpted:

"We were prompted to ask for this interview because of the serious position of the swine industry in this province and because of the consciousness on the part of farm organizations as to the necessity of retaining to a major degree a type of diversified farming in most areas in Alberta. Our action arises fundamentally because of

the important effect that the swine industry has on the economic life of not only the farm people, but of all the people of Alberta.

"An industry that yielded a value of some \$52,895,379 in 1945—the swine industry of the province when enjoying its rightful position, is second only to wheat in exports of agricultural products.

"We believe that the export bacon trade has much to offer Alberta if Alberta is in a position to offer a continuity of supply. In this connection we feel that the producers and the government can afford to share the responsibilities toward a production program that will not only encourage greater swine production and tend to improve the quality of the product, but will encourage the producer to level out his production throughout the year. Marketing figures show over a period of years that for four months in the year, June to September inclusive, the delivery to the markets is much less than for other months.

"We are of the opinion that this condition is the result of producers not breeding sows for winter farrowing, owing to greater costs and losses experienced in farrowing pigs during winter months. In this connection, and as a suggestion to alleviate this discrepancy, we request the government of Alberta to pay a premium of \$2.00 for each A and B hog marketed in Alberta from approximately the first of June to the first of October and further, that approximately one-half of the cost be borne by the Provincial Treasury and one-half collected through a levy on all the hogs marketed during the period approximately from October first to June first. We are not making the request as to time of payment definite as it may be found necessary when drafting the plan to graduate the payment at the beginning of the period and advisable to extend the period of payment.

"For the purpose of estimating the cost of the project, we suggest that possibly the marketings for 1941 or 1945 offer a better basis for calculation than do any of the other previous years. Also, we are of the opinion that an average of years is not suitable in as much as in the period before the war the number of marketings would be insufficient to adequately take care of the industry under desired normal conditions, and we consider the war years offer a greater number of marketings than we could reasonably expect to deliver under normal conditions.

"We estimate for the year 1945, when we marketed 118,671 of A grade and



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229,479 grade B hogs—a total of 348,140 A and B hogs, that during the four short months June to September inclusive, the cost would be \$696,280 at the suggested premium of \$2.00 each. The amount to be shared equally by the government and the producers would for each be \$348,140. During the eight months of greatest marketing, namely October 1 to June 1, we marketed a total of 1,498,058 hogs. This would necessitate the collection of one-sixth of one cent per pound on each of these hogs, on the basis of 150 pounds per hog, or approximately 25 cents per hog."

The delegation also requested the government to establish a cost survey service covering major agricultural products, with a view to ascertaining the cost production of such products. In support of this request the delegation urged the general economic unrest, the disadvantageous position of those engaged in agriculture where the prices of agricultural products are being considered, and the need for putting farmers in a position to place their cost of production before consumers so that cost of production might become "the major factor in arriving at reasonable prices for domestic and export agriculture products to both consumer and producer." The government was requested to undertake this work on a reasonably large number of farms representative of the different crop zones in the province, and representing farms of different sizes. It was suggested that this work might possibly be done in co-operation with the Economics Division of the Dominion Department of Agriculture.

"We are of the opinion," said the delegates, "that in this day and age producers and the government, through its Department of Agriculture, must know more details of the economics of the industry, and suggest that this can best be done through an actual survey, with the results tabulated in facts and figures."

Twenty Institute Scholarships

THE Agricultural Institute of Canada last year awarded 20 scholarships valued at \$800 each to Canadian scientists who desire to take advance training in agricultural fields. Early in August this year an additional 20 scholarships of the same value were again awarded by the Institute; and Dr. J. F. Booth, Ottawa, president, stated that it was hoped to make a similar number available in 1948.

Funds for this extensive program of assistance to agricultural science are subscribed by industrial firms as a measure of generous co-operation with the Institute for the benefit of Canadian agriculture. Members of the Institute are some 1,800 professional agriculturists in all the nine provinces, and representative of every phase of agricultural work, from important administrative responsibility to that of the agricultural engineer, the plant breeder, the animal nutritionist, the agricultural representative, and the specialists in weeds and plant and animal diseases.

The recipients of these scholarships this year represent seven of the nine provinces, and are graduates of nine universities—five from the University of Alberta, three from the University of British Columbia, two from the University of Alberta, and one from the University of Manitoba. They will take their advanced training in 11 different universities, of which seven are located in the United States and four in Canada. They will study in seven different fields, four of them in plant science: five in agricultural economics, three in soils and entomology, two in agricultural engineering and animal science, and one in agricultural chemistry. Two scholarships each are sponsored by the Alberta Wheat Pool, the Saskatchewan Wheat Pool, the Imperial Oil Company, and the T. Eaton

Company, and one scholarship each by the Borden Company, Imperial Tobacco Company, the United Grain Growers Limited and Claude Gallinger, of To-field, Alberta. Funds for the remaining eight scholarships are made up of smaller contributions from a larger number of industrial concerns.

Small versus Large Farms

BECAUSE large California land owners are trying to change a 45-year-old law providing for federal irrigation water on no more than a quarter-section of land under the same ownership, an interesting comparison between towns serving large and small farm areas has come to light. The Small Business Committee of Congress surveyed two towns in the San Joaquin Valley; Arvin serving farms averaging 497 acres in size, and with a population of 6,236; and Dinuba with surrounding farms averaging 57 acres, and with a population of 7,404. In the big-farm town more than half of the heads of families are farm laborers; in the small farm town less than one-fourth. Around Arvin (big farms) there is 35 per cent of owner operation—in Dinuba (small farms) 77 per cent own their land. Only a third of large-farm owners live in the community, as compared with 70 per cent of the small-farm owners. In the small-farm town, there are twice as many bread winners in mercantile, professional and other white collar occupations; and the volume of business (1942-1943) was \$4,300,000 from 141 retail establishments (Arvin: 62 establishments, \$2½ million business). The average small-farm town citizen spends \$592 in the community as compared with \$407 spent in local stores in the large-farm town. He spent 100 times as much for agricultural supplies, because big-farm owners bought in quantity direct from distributors.


The small-farm town was incorporated and self-governed; the large-farm town unincorporated and governed by distant county officials. Dinuba, the small-farm town, possessed paved, well-lighted streets, sidewalks, municipal garbage collection, efficient water supply, police and fire protection, more service clubs, better schools and playgrounds, and a better developed civic consciousness.

Bristles from Chinese Pigs


AN illustration of how widely used agricultural products are, and how far afield manufacturers go for their raw materials, is provided by the common tooth brush. The chances are that the bristles in the brush you use in the morning or before going to bed at night ordinarily grew on the back of a Chinese pig in Szechuan, the largest province of China. More pig bristles are produced in China today than ever before, since apparently the pig population did not suffer materially during the war in the so-called bristle areas. Pigs flourished in what is called the Red Basin in the heart of Szechuan and it is reported that there has been a considerable increase in the number of pigs.

Before the war, China produced 13 million pounds of bristles, of which 90 per cent were exported. China, in fact, provides 70 per cent of the world's bristle requirements, particularly of the white bristles used for making tooth brushes. Since the war, Great Britain and Australia have been making great efforts to secure bristles from China, and Australia has even sent airplanes to China to bring back bristles. These are graded according to length, and run from 2¼ inches to six inches in length. The pig's bristle is very useful in the manufacture of brushes because it is strong and resilient. The United Kingdom imports from 2,000 to 3,000 tons per year from all countries, and pays up to two million pounds for them. Canada imports hairs and bristles to the extent of \$1,000,000 per year.

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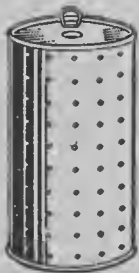
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Prairie Grain Crop

ON August 13 the Dominion Bureau of Statistics gave its first estimate of 1947 production of Canada's field crops. This estimate was nearly a month ahead of first estimates in previous years. Continuing hot weather, as well as rains in some parts of the prairies followed immediately on the report, which means that it may have been rendered incorrect by the time it appeared. Wheat in the three prairie provinces was estimated at 336 million bushels, but a few days later the Winnipeg Free Press crop report estimated the outcome at 321 million bushels.

Wheat yield on the prairies was estimated by the Bureau at 14.6 bushels, compared with 17.1 bushels for 1946. Acreage was down about 360,000 acres to 22,992,000 acres, and production down by 64,000,000 bushels to 336 million.

Oat acreage is down 600,000 acres, estimated to average 25.4 bushels, for a total of 200.3 million bushels, as compared with 276 million from an average yield of 32.4 bushels per acre in 1946. Barley acreage increased about 1,200,000 acres, but a 20 per cent reduction in yield from last year, to 20.6 bushels per acre, promised a crop approximately the same as 1946, at 144.6 million bushels. Rye acreage increased by 60 per cent, yield by a third and the probable crop more than double 1946. Flax seed acreage increased by about 75 per cent; average yield will remain about the same; and the probable crop about one-third more, at 10.6 million bushels.

Cereals Committee in Winnipeg

THE chairman of the Cereals Committee of the International Emergency Food Council is George McIvor, chief commissioner, Canadian Wheat Board. As a tribute to Canada, the Cereals Committee, consisting of representatives of nearly 30 countries, met in Winnipeg on August 18. This was the first time the committee has met outside of Washington, D.C. since its formation a year and a half ago. The proceedings were in camera and the meeting was attended by representatives of the Food and Agriculture Organization of the United Nations.

The meeting was held only a week prior to the annual conference of the United Nations Food and Agriculture Organization, which began in Geneva, Switzerland, August 25. Sir John Boyd Orr, director-general of FAO, described the Geneva meeting as the first world food parliament, at which 47 nations would report on their progress and their problems in achieving a better balance between food supplies and requirements of the world.

It is proposed, said Sir John, to turn every annual FAO conference hereafter into a world food parliament, because: (1) food should have first attention in world affairs as food is the most fundamental need for life itself; (2) an increase in food production means extensive development in industry as well as agriculture, which means increased purchasing power, employment and expanded trade; and (3) more people are engaged in agricultural production than in all other occupations combined, and food and agricultural products bulk largest in world trade.

The Use of Combines

THE development of farm machinery and farm power equipment in Canada keeps pace pretty well with that of the United States. For this reason, any estimate of the progress of a particular type of equipment in the United States would apply for the most part to Canada, except with respect to numbers.

The U.S. Department of Agriculture has recently reported on the spread of the use of combines in the United States. It reports that in 1935, com-

bines were used to harvest about 80 per cent of the wheat, 40 per cent of the oats, 65 per cent of the barley, 50 per cent of the rye, 60 per cent of the flax seed and 35 to 40 per cent of the crops such as buckwheat and rice. As recently as 1938, only about half the wheat and one-tenth of the oats were harvested by combines.

In Kansas, California, Washington and Oregon, more than 90 per cent of the small grain crops were combined in 1945, and it is of interest to note the statement that in the three Pacific Coast states mentioned, combines were used for three or four decades prior to their introduction to other parts of the country. Their use began in California and the Pacific northwest in the latter part of the 19th century. The first combines were very large, horse-drawn machines with wheel traction. It was not until World War I that the newer, tractor-drawn combines with mounted motors were introduced into the mountain and plain states.

During the early '30's, the small combines, cutting six feet and less, were responsible for bringing combine-harvesting to the corn belt, the northeast and the southeast. A further development has occurred during the last 10 years when 80 per cent of the combines sold have been small machines with rubber tires. Still more recently, the self-propelled combine has been introduced, which has become increasingly popular on larger grain farms and on the large-scale rice farms of the south. It is estimated that about 400,000 combines were used in the 1945 U.S. harvest, and that at least 20 per cent more will be used in 1947.

Farm Prices Going Up

IN June this year the index number of farm prices of agricultural products stood at its highest mark since 1939, when it averaged 91.8 compared with an average of 100 for the 1935-1939 period. The June, 1947 level, was 194.8, which was 10.7 points higher than the 1946 average, and 18.1 points higher than the average for 1945, the last war year.

Price levels vary considerably in the various provinces. In Prince Edward Island they are only 75.8 per cent higher than for the 1935-1939 period, while in Quebec the increase in price level has been 109.5 per cent. Next highest is British Columbia with a rise of 105.6 per cent, Ontario with 100.5, New Brunswick 95.8, Manitoba 94.4, Alberta 92.5, Nova Scotia 81.7 and Saskatchewan 80.5. These are percentage increases in average prices received by farmers over the average for the 1935-1939 period.

Prepared Breakfast Foods

WHEN you eat that dish of corn flakes in the morning, you probably haven't much of an idea how many of these prepared foods are manufactured in Canada. In 1945, the last year for which figures are available, the factory value of sales for this type of product was \$13,717,791.

These products are made by less than 1,000 people, of whom 768 work for four companies producing more than a million dollars each. Furthermore, Canadians seem to eat more corn flakes than anything else, since corn flakes accounted for 29,655,000 pounds of prepared breakfast foods in 1945, out of a total of 75 million pounds. Wheat flakes and bran flakes each were produced to the extent of more than five million pounds; puffed grains 6.6 million, and all other prepared foods combined, 28,200,000 pounds.

This industry provides a market for over 800,000 bushels of wheat, 12,000 bushels of rye, 6,000 of oats, 807,000 bushels of corn, 7.8 million pounds of corn grits, 8.3 million pounds of bran, and 9.8 million pounds of wheat flour, in addition to other materials including 1.6 million pounds of salt and 1.8 million pounds of sugar.

British Columbia Eyes Whitehall

More than any other Canadian province B.C. has reason to be concerned about Britain's financial plight

By CHAS. L. SHAW

ANYONE visiting British Columbia today would be impressed by two things—the crowded streets of the cities and the activity in industry; but top-ranking industrialists are banking their fires against the possibility of early recession resulting from disruption of export business.

On the surface, everything looks very rosy in the west coast province. Labor troubles are at a minimum, demand for the products of the basic industries was never much greater than it is today, and the tourist trade has broken all records by a wide margin.

But anyone who takes time to examine all the prospects cannot fail to see danger ahead. Of course, British Columbia may be able to avoid the economic shoals just as she did immediately after war's termination when everyone was predicting widespread unemployment—and being proved a very poor prophet. There is a bounce to British Columbia's industry that discourages anyone from being skeptical for long. The only forecast that ever seems to materialize is the one about expansion and continued prosperity, regardless of the pessimistic indications that may arise from time to time.

Nevertheless, it is obvious that British Columbia cannot go on indefinitely, depending on markets that haven't the money to pay for what they get. More than any other province, British Columbia has reason for anxiety over the United Kingdom's financial plight, for almost every important source of her export revenue has been derived very largely from the British market.

For that reason, many British Columbians were chilled by the announcement by Prime Minister Attlee that the United Kingdom would have to reduce her imports of soft wood by some \$40,000,000. Because the soft wood lumber industry is British Columbia's greatest, and the United Kingdom has probably been getting more of this lumber from B.C. during the past few years than from any other one source of supply.

The British government also recently concluded important negotiations for canned salmon from Canada's west coast. If Britain hasn't got the dollars to pay for this as well as for lumber, it's possible that canners and fishermen as well as loggers and sawmill operators will feel the pinch.

But there has been a tendency to draw the darkest possible picture from this situation. The chances are that Britain will curtail her lumber purchases in several other countries before she cuts down on British Columbia, and the same applies to canned salmon, for the nutritive value of this product is highly placed and the west coast is regarded as one of the United Kingdom's most dependable suppliers of an essential food.

It's only fair to suggest, then, that British Columbia may not be hit hard at all by the United Kingdom's predicament. Nevertheless, the risk cannot be overlooked, and that accounts for the long-range planning being done by lumber and other interests to keep in closest possible touch with the markets everywhere. If the United Kingdom is going to be compelled to whittle down her purchases—and it looks as though this is inevitable — British Columbia wants to be ready to divert the flow of trade elsewhere.

But British Columbia manufacturers will be reluctant to see the trade link weakened with the United Kingdom, regardless of the circumstances. The United Kingdom was the salvation of the lumber industry back in the early '30's when the sky-high tariffs of the United States shut B.C. lumber out of that once profitable market; the United

Kingdom has been one of the best customers for apples, fish and many other commodities produced in profusion west of the Rockies. For that reason British Columbians will be hoping and working hard for some sort of agreement that will enable Britain to go on buying.

One of the farm commodities that has been shipped in considerable quantity to the United Kingdom from British Columbia during the past few years is berries, in SO₂ solution. So far, this trade has represented about \$6,000,000. A British ship recently left New Westminster with a record cargo of 1,100 tons of processed raspberries, and for the entire season at least 3,000 tons of berries so processed will be shipped overseas in barrels.

This has been profitable business to the growers and an advantageous one in disposing of any surplus from the fresh pack which customarily is sold in the domestic market. The British Columbia government's department of trade and industry acts as a go-between in this deal between the British ministry of food and the growers.

ANYTHING that stimulates ocean shipping on the west coast is favorably regarded these days, because it is realized that unless adequate tonnage in freight is developed the ship companies will find some other trade route for their vessels.

Before the war, of course, scores of freight and passenger ships operated regularly between Vancouver, Victoria and Prince Rupert and the seaports of the Far East. Such business is negligible today and for obvious reasons. The economic condition of both China and Japan is such that trading with either country is almost hopeless; yet the recovery of these markets has tremendous potentiality for western Canada.

Several representatives of Vancouver manufacturing and exporting houses are in Japan this month making a survey with a view to determining when and how trans-Pacific trade may be resumed. The general belief is that it will be a long, uphill struggle, but in view of the stakes involved almost every effort will be worth while.

This precarious situation of deep sea shipping out of British Columbia is one of the reasons for speculation among businessmen as to just what the early future may hold for the province. The long term prospects are probably nothing to worry about, but many a west coast businessman would pay well for a reliable glimpse into the next few months.

The domestic market is complicated by the application of the railroads for an increase in freight rates. If this application is granted, the selling territory for west coast plants would be considerably restricted, as previously pointed out in this column.

Resistance to the railroads' program lost one of its most effective leaders when the crusading voice of Gerry McGeer was silenced by death a few weeks ago. McGeer was one of Canada's unique personalities and one of the West's ablest champions. His story book career led from a milk route and iron foundry to the provincial legislature, the House of Commons, the Canadian Senate and twice to the mayoralty of Vancouver. He had even been spoken of as a candidate for Prime Minister and that office had actually been his lifetime ambition. Had he not driven himself so hard he might even have achieved it, for his forceful personality had gained nationwide respect and might have carried him to almost any height politically.



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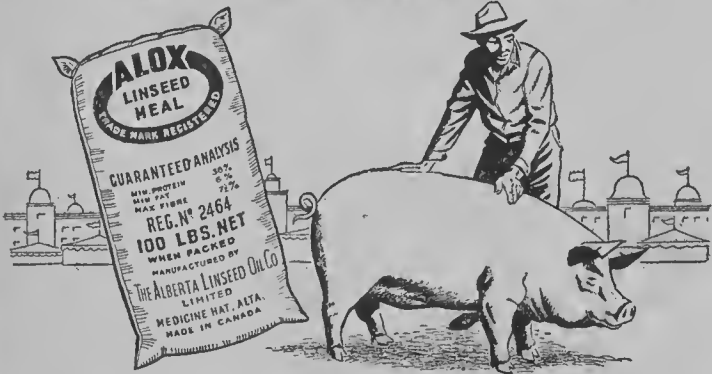
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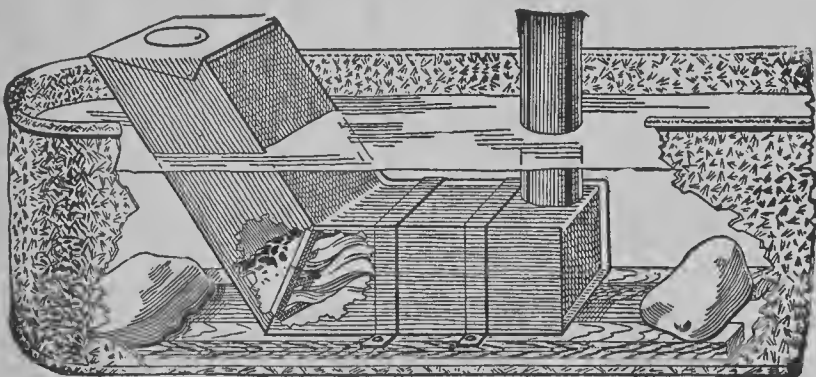
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Minnesota Develops New Swine Breed

To get away from the lard hog of the U.S. Corn Belt, Minnesota animal scientists have produced a new breed

By FANNIE HOFFER

THE Tamworth hog, an old established English breed that is well known to Canadians as a bacon producer, has made another great contribution to commercial hog production. It is the ancestor of a new breed of swine that has been hailed in Minnesota as the answer to the swine breeders' prayer and perhaps the beginning of a new approach towards improvement of breeds.

The new line, produced after 10 years of research at University Farm, St. Paul, is the Minnesota No. 1 hog, a type that combines the thrifty, fast gains of the pork type of hog with the quality and large percentage of lean meat of the bacon-type hog.

By inbreeding and selection it has been purified to a higher degree than most established American breeds. It is neither a crossbreed nor a hybrid.

Like its English ancestor, the No. 1 is basically red and may have some black spots or specks. But its body is streamlined . . . longer, with shorter legs, larger ears and longer snout than most American hogs. The length of belly (bacon) and loin, together with the quality of belly cut and the lessened amount of fat, has met the approval of packers. Its long hip produces yield and quality of ham, shown by slaughter tests to be high.

A new phase opened up for commercial hog production when experiments showed that No. 1 crosses with

other lines with exceptionally good results. Last year the Poland China-Minnesota No. 1 crosses averaged 215 pounds at 154 days and made 100 pounds gain (weaning to finish) on 301 pounds of feed. In addition, reported Dr. L. M. Winters, University of Minnesota livestock expert, they yielded beautiful carcasses.

The Minnesota No. 1 hog had its start in 1937 when the Tamworth was crossed with the Landrace breed. This was Minnesota's beginning of a research project that was part of a larger project shared by 13 states. The questions in the minds of experimenters were how to use inbreeding, crossbreeding and selection to better advantage in the improvement of swine.

Dr. Winters was in charge of the Minnesota project. After the first Tamworth-Landrace cross, the stock was bred entirely from within by a flexible system of inbreeding . . . attempting to base matings on best-performing rather than full brother-sister or half brother-sister animals.

Selections had to meet rigorous tests of fertility, survival, rate of gain, feed per unit of grain, and body form. After nine years, when more than 12,000 pigs were farrowed alive and more than 7,000 were fed out in complete litter tests to produce this and other lines, the Minnesota No. 1 emerged with flying colors.

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averaged 9.28 hogs born alive per litter and has reached an average weight of 211 pounds at 168 days. Feed requirements were low—315 pounds per 100 pounds gain to bring the pigs from weaning to 200 pounds on pasture.

Today about 80 swine breeders have enough of the Minnesota No. 1 hog to establish a breeding herd.

The breed was officially recognized August 24 last year at a ceremony at the Grand Rapids branch of the University of Minnesota Agricultural Experiment Station. That day, formation was announced of the new Inbred Livestock Registry Association, an organization stimulated by the success of the No. 1. Among its other functions, the association will develop and administer a fund for the promotion of research aimed at improving the efficiency and quality of the hog as a meat animal.

The association won't have long to wait for a new line to register, for hard on the heels of the No. 1 is the Minnesota No. 2 hog which is now in its fifth year of development at University Farm. This line was started from a cross of the Yorkshire with two inbred Poland-China lines. Though it is not regarded as a finished product, its major characteristics are rather well established. It is spotted black and white with erect ears, and has slightly longer legs and shorter body than the No. 1 although measurements show that it is longer than it appears to be.

Dr. Winters expects that these lines and others still to be developed will be used in a system of crosses for commercial swine production that will "elevate purebred breeding to a still higher plane and create an unprecedented demand for breeding stock."

(Fannie Hoffer writes from University Farm, St. Paul, Minnesota).

Sheep Industry Declining

WESTERN sheepmen in the provinces of Saskatchewan, Alberta and British Columbia, are becoming alarmed at the gradual decline of sheep numbers and the lessening interest in sheep and wool production. The Western Sheep Council has recently been organized to study ways and means of bringing about renewed interest in sheep raising.

The consumption of mutton and lamb in Canada is very low per capita and the production of wool by no means meets Canadian requirements. It is true that flock owners on grain and mixed farms, entirely outside of the range country, have repeatedly stated that sheep are the best paying of all the farm enterprises and the most economical of labor, with the exception of a comparatively short period during lambing. Notwithstanding opportunities for profit that exist, sheep are declining in numbers so that it would appear that some other factors than prices and markets must be responsible for this decline.

Some of the indifference to sheep is probably due to the fact that a considerable number of farmers simply do not like sheep. By far the most common reason is that coyotes are a serious menace, and dogs also. Dogs, it would appear, are able to exert a strong if indirect, political influence. So many people possess dogs and so many people like them, that any legislation restricting their right to range the neighborhood and kill off the occasional sheep, if they happen to be dogs of that kind, is very difficult to obtain.

Similarly, the bounty on coyotes is not large enough and is not retained at a high enough level for a long enough time to keep down the depredations of these useless animals. It is true that the bounty has been raised in some provinces in recent years, but so also have wages and the cost of living.

Another objection to increasing sheep numbers that is heard very frequently is that it would involve considerable expense for fencing, and on some farms

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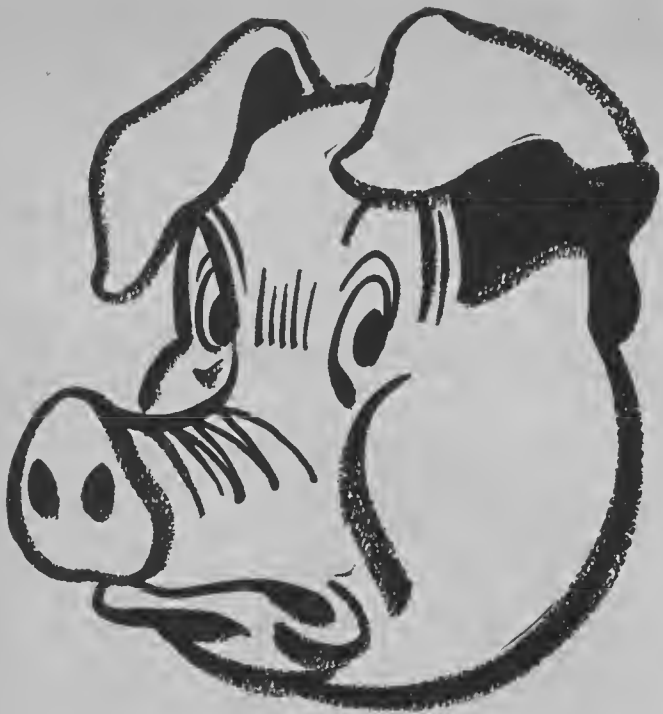


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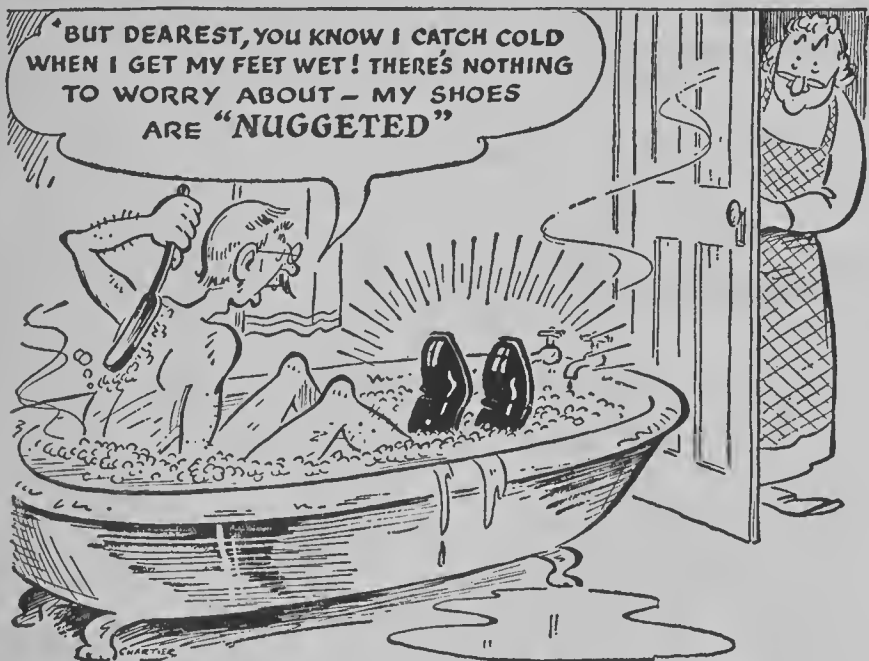
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would involve the breaking up of fields that are now of most economical size for large power equipment. The ideal arrangement would undoubtedly be to have small flocks on a large number of farms, such flocks ranging in numbers from 15 to 30 or 35 ewes. There are livestock policies in nearly every province, by which assistance in obtaining good quality rams can be obtained; and small flocks such as these are economical and easily handled, as well as doing useful service in helping to keep down weeds on summerfallow and small uncultivated portions of the farm.

A recent statement by A. J. Charnetski, livestock supervisor of the Alberta Department of Agriculture, says unequivocally that "sheep raising is still the best paying proposition." He points to the fact that in Alberta there is a goodly number of breeders of purebred black-faced sheep, whose rams are finding a steadily growing market in the United States. This is owing to the fact that western Canadian Suffolk and Hampshire rams possess ruggedness, size and constitution, which makes them popular with U.S. ranchers of the west and northwest for crossbreeding with white-faced range ewes. Such cross-breeds have stronger, deeper lines and deeper and thicker hindquarters. In the feed lot these cross-bred lambs make economical gains and are desired by the packer-buyers.

As in all cross-breeding of livestock, of course, it is important that the cross-bred ewe lambs be not kept for breeding purposes. One of the reasons in the case of sheep is that cross-bred ewes do not have the herding instinct possessed by the Rambouillets, Corriedales, or the Romnelets. Consequently, it is deemed desirable that a range breeding flock retain the characteristics of the white-faced range sheep.

Mr. Charnetski recommends that farmers residing in areas suitable to sheep production should seriously consider obtaining a flock of breeding ewes this fall. Three or four-year-olds, sound in udder and mouth and range-bred he believes offer the best possibility, because they are hardy, productive, and available at reasonable prices. If they can be crossed with black-faced rams, the resulting lambs are of high market quality.

Concentrates for Cattle on Pasture

WHEN the grass on which beef cattle are pasturing begins to mature, it loses materially in nutritive quality. No longer will cattle make gains up to two pounds daily on grass alone. The gains decrease during August and September until, by October, cattle are barely maintaining weight.

For this reason, tests have been conducted frequently to find out whether it would pay to supplement the mature grass with concentrates fed on pasture, in order to keep cattle gaining until marketed in late fall. The results show that without this additional feed in the form of concentrates, it might be advisable to market early before the fall rush occurs. If the feed is available and the extra weight is desired, yearling and older animals can be made to put on from 100 to 200 pounds additional weight and marketed as finished cattle rather than as feeders or as grass-fat.

The Swift Current Station points out that a fresh pasture for fall use, with water conveniently at hand, will carry 50 to 75 steers on a half-section, or sometimes on a quarter. Gains of from two to 2½ pounds per day can be secured by feeding from 350 to 400 pounds of concentrates in addition to the pasture. It is recommended that whole oats be hand-fed at the start, changing to chopped oats after three or four days and later adding ground barley or feed wheat if available. By the fourth or fifth week, the cattle should be on full feed, and self-feeding can replace the hand-feeding. Adding a pound of linseed oilcake to each 12 pounds of

grain, will produce a better balanced ration and increase the rate of gain.

Peavine—Silage or Hay?

IN southern Alberta, where a considerable acreage of peas is grown for canning purposes, it is a common practice to take the peavine from the viner and make it into ensilage for livestock feeding. In some cases, according to the Experimental Station at Lethbridge, hay has been made from the peavine, and last winter the Station conducted an experiment to compare the value of peavine hay and silage for finishing beef cattle.

The results of a single test are not necessarily final, but the results are interesting. Three lots of cattle were fed respectively alfalfa hay and grain, peavine silage and grain, and peavine hay and grain. The three lots each averaged just over 800 pounds at the beginning of the test, and finished weighing just over a thousand pounds. The results of the single experiment indicated some advantage in favor of the peavine silage, which has the additional benefit that it is much cheaper to produce.

The average daily gain from peavine silage was 1.95 pounds; from peavine hay 1.73, and from the alfalfa hay 1.66. The two lots of cattle fed alfalfa and peavine hay consumed almost exactly the same quantities of roughage, those on the peavine hay consuming a little less grain. The cattle on peavine silage consumed 1,795 pounds of roughage as compared with 699 pounds for those on alfalfa, but ate only 594 pounds of grain as compared with 699 pounds for those on alfalfa. Furthermore, the warm weight dressing percentage based on off-car, overnight shrinkage, was 62.7 per cent for the cattle on peavine silage, as compared with 61 per cent for the other two lots.

These cattle were on feed for 112 days, and all carcasses but one in the three lots, were graded Red Label. There seems to be no point in the additional expense involved in making peavine hay according to the authorities at the Station. Silage can be made in any kind of weather at considerably less expense, although a certain amount of spoilage is inevitable on the outside of a stack.

Nipple Feeders for Calves

THE anonymous poem, "Calf Pen Technique," appearing in the June issue of The Country Guide, led at least one reader to suggest that an ordinary flat dish filled to the correct degree, on a take-it-or-leave-it principle, would very shortly solve the problem of teaching calves to drink. Actually, it isn't such a good idea, because careful experiment has determined the fact that dairy calves appear to make more rapid gains and keep in better condition when nursed by a cow than when fed by hand from an open bucket.

Experimenters have tried to imitate the cow for many years, and have experimented with rubber nipples attached to them. These studies have been conducted at several experiment stations, some of them as early as 50 years ago. In 1894, according to the Montana State College, a nine-week feeding trial was conducted with a "patented calf feeder," and the result was that calves so fed had a much higher rate of gain during the period than those fed from an open pail.

Experimenters in South Carolina found that when dairy calves drink from an open bucket, part of the milk, sometimes as much as half of it, taken into the calves' system passes into the paunch, whereas milk nursed from a nipple rarely gets into the paunch. It is also found that when a nipple bucket was used, the milk is taken more slowly, with the result that it is more thoroughly mixed with saliva, and more thorough and favorable digestion

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of the milk in the stomach is secured. It has also been found that milk taken from an open pail, because consumed more rapidly and more frequently gulped, is likely to cause digestive disturbances which may result in scours. For all of these reasons it seems to be the general opinion that feeding calves by a nipple bucket, rather than an open bucket, would result in the raising of better calves.

Workers at the Montana Agricultural Experiment Station have made feeding trials with a home-made metal nipple bucket six inches in diameter, seven inches high, and with indentations one inch apart graduating the contents of the bucket in pints. This bucket is of heavy galvanized sheet metal, with the nipples 2½ inches long made of 1½-inch copper tubing soldered close to the bottom into the side of the bucket and rounded at the end with solder. The hole in the end of the nipple should be about 3/32nds of an inch in diameter to prevent too rapid feeding. The buckets are held in small wooden racks made for the purpose by an ordinary door button which prevents the calf from bunting it out. They were fed for two or three days by their dams before being fed by nipple bucket, each calf being given its mother's milk for a few days, and later fed mixed herd milk or milk from an individual cow.

There has recently been received in this office an illustration of a commercial calf nipple feeder, manufactured in Minnesota. This nipple feeder is said to consist of a specially made rubber nipple mounted over a rubber base, containing a valve which holds milk up at the nipple at all times, as in a cow's teat. In this case the feeding device is mounted in the partition of the stall, 18 to 24 inches from the floor, with the container of milk on the other side of the partition where the calves do not see it. It is stated that calves normally feed with head extended or erect, so as to eliminate gas or air, which makes it possible for them to mix large quantities of saliva with the milk, which is swallowed in small amounts directly into the true stomach. In this commercial device, the rubber nipple is secured firmly to the partition with a flanged metal disc, and is connected with the milk container on the other side of the partition by rubber tubing.

Winter Supply of Roughage

THE dry season has presented many farmers with winter feed problems for livestock. If every advantage has been taken of opportunities to put up hay and to utilize available forms of roughages, the chances are that the cattle and other livestock remaining after fall marketing can be brought through in good condition.

Slough hay is not as good as other hay, but it helps to make a good winter ration when fed along with other hays such as crested wheat grass, brome, sweet clover and native bluegrass, all of which are about equal in winter feeding value and superior to slough hay by perhaps a little more than ten per cent. Alfalfa fed alone to calves in winter is satisfactory except in severe cold spells, when it does not supply as much heat as other hays which are higher in carbohydrates. Mixed with grass hay, alfalfa provides a roughage perhaps 20 per cent better than any single crop. Sweet clover, also, fed with other roughages makes a good winter maintenance ration.

All hays from grain crops has about the same value for wintering cattle. If they have been cut in the early dough stage they are richest, but in actual feeding trials it has been found that when cut in the late dough stage better feeding results are secured. Corn, millet and sorghum have about the same value as grain hay. Oat and wheat straw have about the same value for feeding, and grain straw has about one-half the value of good grass hay.

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STANFIELD'S LIMITED TRURO, NOVA SCOTIA

A STYLE AND WEIGHT FOR EVERY SEASON

TROUBLE-SHOOTING TILLAGE MACHINERY

Continued from page 8

made on the ground. The distance between the marks now is measured in feet.

The tractor then is hitched to the implement and the distance covered by the wheel in making the five revolutions while pulling the working implement, is measured. The difference obtained by subtracting the second measured distance from the first is the amount of slippage. The percentage of slippage is obtained by dividing the amount of slippage by the first measured distance.

IN Mr. Bryce's demonstrations he often shows the possibility of reducing slippage by raising the implement's hitch. Frequently it is found that when an implement is hitched four or five inches higher on the tractor, slippage of the rubber tired tractor is decreased by four or five per cent. Making the hitch higher places more weight on the rear wheels, and removes a corresponding proportion of the weight from the front wheels. Raising the hitch of course may be carried to extremes, as it could cause the front end to rear. In general, however, it may be safely done so long as it does not interfere with steering.

One or two duckfoot cultivators are usually brought out. The main fault noted in the adjustment of these implements, according to Mr. Bryce, is that the shovels are not always at the proper angle at working depth. They cannot do efficient work unless they have an even suction, which in most cases should be very slight. Other things to look for include a periodic check of spring tension, and of the drag-bar bolts. Unless the bolts are tight, the shovels can sometimes go around weeds instead of cutting them off, and these few will go to seed to lower next year's crop yield.

The various cultivator blade types are also discussed. From experiences related by farmers, and from results of experiments conducted at Dominion Experimental Farms, the usual impression is that the Noble blade, or similar type of implement which leaves the stubble on top of the ground, is ideal for controlling soil drifting in drier areas. It is occasionally, however, found poor in weed control when field moisture is high, or when it rains shortly after cultivation. Its action in slicing off the weeds underground, and leaving them standing much as they were, has the effect of transplanting them when moisture is plentiful.

Questions are frequently asked about the desirability of using a subsoil tiller in connection with cultivation. When these are used as subsoilers the draft is exceedingly high. Experimental evidence does not indicate that subsoiling is necessary under western Canadian conditions.

"So far, all experimental farm tests indicate that surface working, sufficient to kill the weeds, is all that is required to produce good results under prairie conditions. Apparently the subsoil is loosened by frost heaving in the winter months, and the hardpan problem of the southern states does not exist nearly as much here," said Mr. Bryce.

Farmers who are about to take their

mowers into the hay field when the field day is held, are ready with questions about how to keep the old machine going another year—when they hope to be able to buy a new one. Apparently the main problem in keeping a mower going as the years go by, is to get away from the lag of the cutter-bar at the outer end. This adds to the draft of the mowing machine, and puts extreme strain on the pitman drive.

There is always a good deal of interest in labor-saving haying equipment. Mr. Bryce emphasizes four labor-saving methods. Very popular among farmers is the use of the hay sweep and the stacker, because of the low overhead for equipment. There are many queries about the combined sweep and stacker, attached to the tractor. This outfit is particularly liked by those who have a labor problem, because one man operates it.

The third type of equipment mentioned is the field hay-chopper, commonly known as forage harvester. Then there are the hay balers, still few in number in the West. The principal questions about these machines involve cost of operation in comparison with other methods.

Mr. Bryce explains that the baler machines are best adapted to use by the small percentage of farmers who sell hay from their farms. He also points out that both the forage harvester and field baler can be used for saving straw behind the combine. Another thing which makes the field baler popular is that it is very suitable for baling flax straw for shipment to a plant manufacturing cigarette or bank-note paper.

Occasionally one or two selective chemical weed-killing machines are in the line-up of implements at these field days. Mr. Bryce has found that there is quite an interest in 2, 4-D sprayers and dusters for use against broad-leaved weeds in growing cereal crops.

IMPORTANT is the fact that when a 2, 4-D water solution is used, extreme care is necessary to prevent the jets from becoming plugged, causing uneven distribution of the chemical. For this reason the use of clean water is strongly recommended.

J. M. Parker, soil specialist, attends as many of the field days as possible. His presence is particularly desirable in areas where soil erosion is becoming a serious problem. He discusses soil erosion problems in general, with particular emphasis on preventive measures recommended for soils in the area under discussion. He shows how recommended tillage practices are related to the prevention of soil erosion. The place of commercial fertilizers in the retention of soil productivity is also explained.

"Newly developed tillage machines often are brought to the field days," Mr. Bryce explained. "Of special interest this year were the one-way disc harrows. Tests so far indicate that they move soil with very light draft, and produce satisfactory weed kills. They also help to keep the field level. The disadvantage of the ordinary disc harrow is that it produces ridges in the fields and is not a too satisfactory weed killer, unless double disced, which tends to encourage soil erosion."

Several oscillating harrows were seen at field days last year. Tests made with the dynamometer showed their draft to be slightly higher than that of the ordinary drag harrow, but they were far superior in trash cleaning ability.

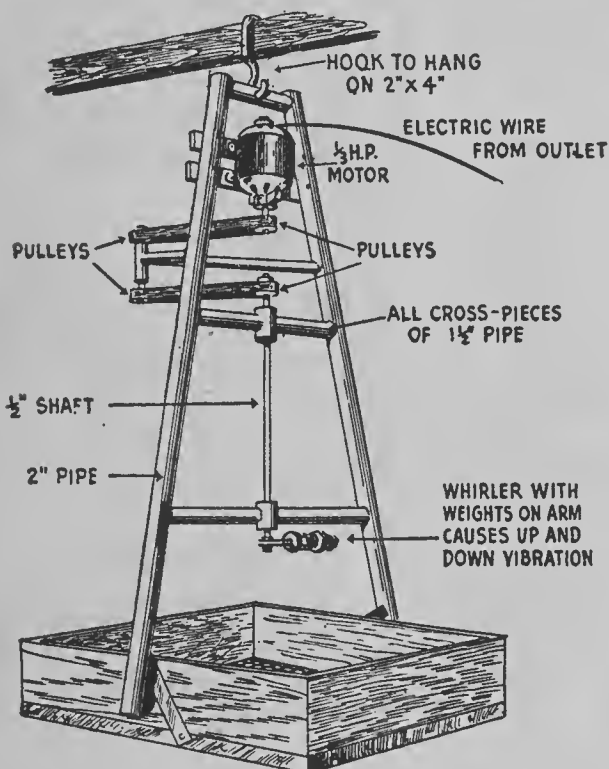


IDEAS

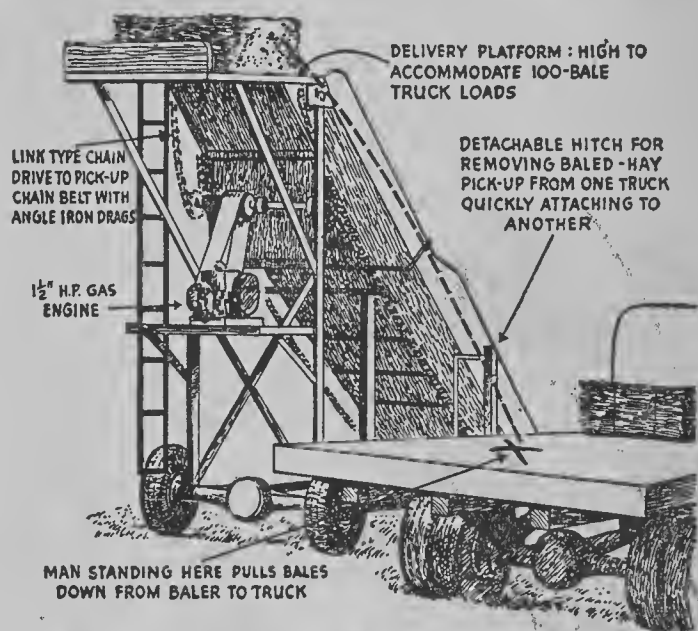
from a Neighbor's Farm

Safeway's Farm Reporter keeps tab on how farmers make work easier, cut operating costs, improve crop quality. Safeway reports, (not necessarily endorses) his findings because we Safeway people know that exchanging good ideas helps everybody, including us. After all, almost a fourth of our customers are farm folks.

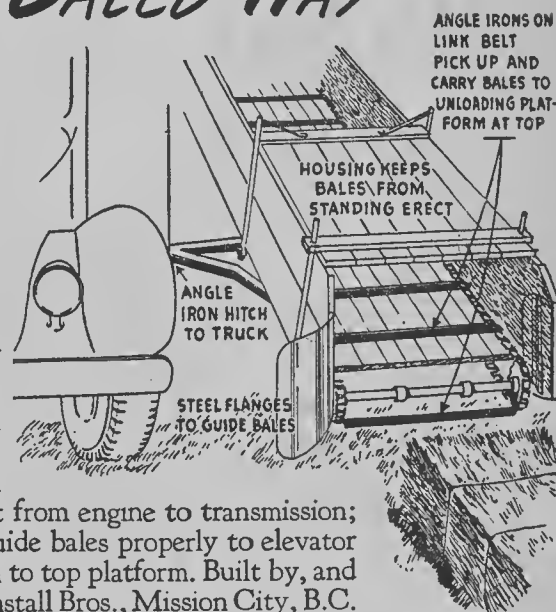
A SHAKEDOWN FOR THE "GOOD EARTH"



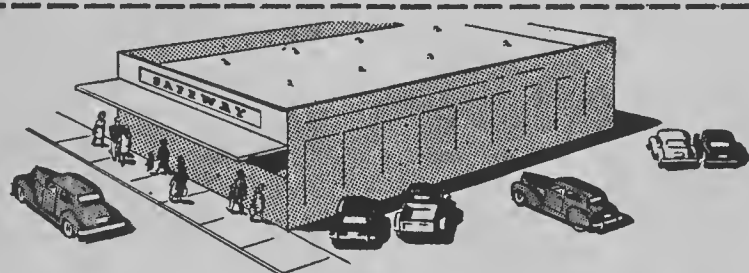
John Daman, a green gardener of St. Vital, Manitoba, saves time and effort with his home-made, one-man operated ground screener, using it for screening sod for his hot-houses. Daman took two pieces of 2" pipe four feet long and welded three pieces of 1 1/2" pipe on as cross-pieces. He clamped a 1/2 H.P. motor near the top with two pieces of flat iron. Pulleys on an arm and a 1/2" shaft downward were installed, all pulleys (with V-belts) being used as tighteners. Daman then attached a "whirler" to the bottom of the shaft with weights on one side to throw the device off-balance and cause an up-and-down vibration when the power is turned on. Attached to the bottom of the frame is a 1/2" metal screened box. 50 boxes an hour can be sifted by this screener, Daman says.



EASY WAY TO PICK UP BALED HAY



An old car chassis, separator parts and a 1 1/2 H.P. gas engine makes this baled hay pick-up which loads 100 bales of hay in 20 minutes. Only two men are needed; a truck driver and a truck loader to take bales from top platform and pile them on truck. For continuous operation, the hitches on side of truck (which pulls baler along) can be readily detached and affixed to another truck as first is loaded. Elevator mechanism is speed regulated by the belt from engine to transmission; flanges at mouth of pick-up guide bales properly to elevator mechanism which carries them to top platform. Built by, and working on the farm of Heptonstall Bros., Mission City, B.C.



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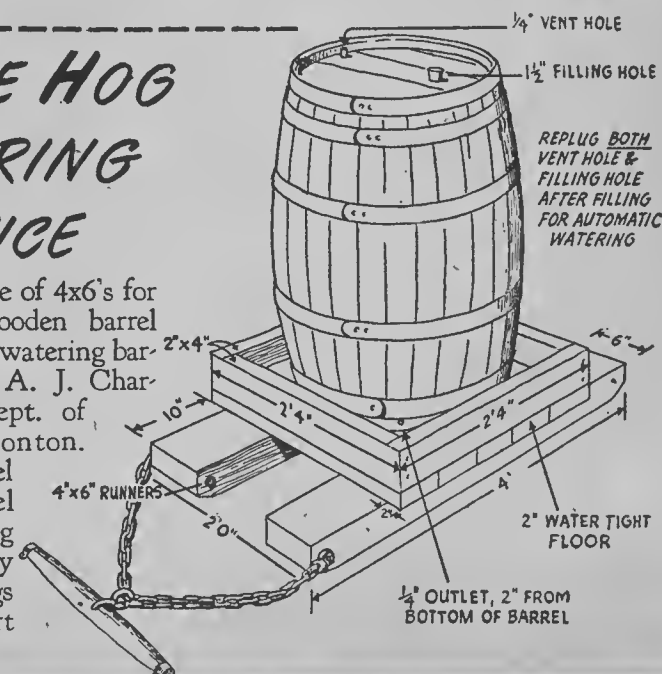
This is part of Safeway's modern plan of retailing good food—another reason why so many families like to shop at Safeway. Your family benefits, of course, on both the consuming and producing ends. For the more food Safeway sells the more food Safeway can buy from producers—and at prices producers like to get.

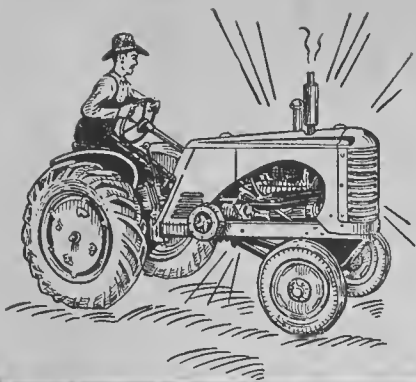
- Safeway buys direct, sells direct, to cut out needless "in-between" costs
- Safeway buys regularly, offering producers a steady market; when purchasing from farmers Safeway accepts no brokerage either directly or indirectly
- Safeway pays going prices or better, never offers a price lower than producer quotes
- Safeway stands ready to help move surpluses
- Safeway sells at lower prices, made possible by direct, less costly distribution . . . so consumers can afford to increase their consumption

SAFEWAY—the neighborhood grocery stores

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Some 2x4's, a couple of 4x6's for runners and a wooden barrel makes an automatic watering barrel for hogs, says A. J. Char-netski, Alberta Dept. of Agriculture, Edmonton. Constant water level is maintained; barrel permits easy drinking yet fits frame closely enough so that hogs can't get much dirt in it.

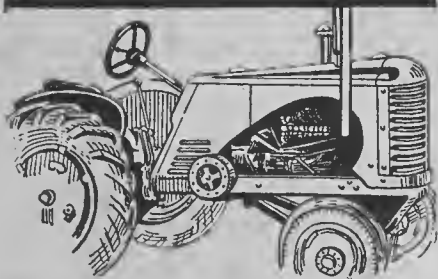




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FIELD



[Dom. Exper. Farms photo.]

Adapted to soils high in lime, sainfoin yields about two-thirds as much as alfalfa and provides early nectar for bees.

Sainfoin---for Poor Soils and Honey

A legume crop, little grown on the prairies, that may be worth growing on some soils

By E. J. BRITTEN

SAINFOIN has created a great deal of interest among farmers and farmer beekeepers during the last few years. It is a plant which has long been grown in Europe for hay and pasture, but has never been accepted as a commercial crop in North America except in limited localities. Why are people becoming interested in sainfoin now, and what are its chances of finding a place in western Canadian agriculture?

Since sainfoin is relatively little known it might be well at this point to describe it briefly. It is a perennial plant—a member of the legume family to which belong beans, peas, sweet clover and alfalfa. It is, therefore, one of that group of plants which builds up soil fertility while also providing a high protein feed. The plants are well branched and attain a height of 18 to 24 inches. The leaves are dark green in color and each leaf consists of a number of leaflets.

Flowers are bright and showy pink in color, with darker markings on the petals. The flowers are borne in spikes which at first are relatively short and dense but which lengthen out during the process of flowering. The lower flowers are the first to open, usually about four flowers per spike being open at one time. As the upper flowers open one by one, the flower spike itself lengthens, until at the end of the flowering season, the spike appears long and slender with the pods spaced along its length. Each pod has a row of short spines on its walls as well as appearing to be sculptured. When ripe the pods are dark brown.

Sainfoin is adapted to soils with a high calcium content, much as alfalfa or sweet clover. It is, for example, grown on some of the very chalky soils of England, in places where alfalfa does not thrive well. Its adaptability to the different soils of western Canada must yet be tested, but there is reason to believe it will thrive on certain of our soils.

Since sainfoin has been known for many years in Europe and indeed has been tried at different experimental stations in Canada and the United States, it may well be asked why it has not before now become a commercial crop. There are probably several reasons for this. Yield is one reason why it is not grown as extensively as alfalfa and sweet clover, since sainfoin admittedly yields less than these other legumes. This in itself, should not be a sufficient deterrent to growing sainfoin for spe-

cific purposes, however. Preliminary data indicate that at the Dominion Experimental Farm, Brandon, in 1945 the yield of sainfoin was about two-thirds that of alfalfa. Another factor which may have prevented the greater use of sainfoin is lack of hardiness in some strains. There are, however, some strains which appear quite hardy.

There are, to offset the above, several advantages in producing sainfoin. Perhaps the most important factor—and one which is already being realized by some farmers, is the need for a wider choice of forage legumes. Alfalfa and sweet clover have been the chief legumes for hay and pasture, with smaller acreages of red clover, alsike and others in limited localities. With the destruction of many acres of sweet clover by the sweet clover weevil and the discovery of the presence of destructive crown and root diseases of both alfalfa and sweet clover, came the realization that other legumes must be made available to western farmers. Sainfoin is one possibility in this effort to provide a legume to supplement existing ones.

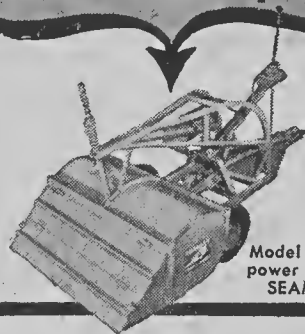
There are, in western Canada, large areas of unexploited land which, for various reasons, have not proven profitable to farm. While experimental tests will have to be made in each of these areas before definite statements can be made, it is possible that sainfoin might grow reasonably well in some of these areas, since it is largely on the poorer soils in Europe that sainfoin is produced.

Beekeepers, in particular, have shown much interest in sainfoin. This is due to two main factors. The first is the decrease in acreage of sweet clover. The Manitoba Department of Agriculture reports in that province alone a decrease in sweet clover for hay from 300,000 acres in 1939 to less than 150,000 acres in 1945. The second factor is the time of blooming of sainfoin, which extends from early June to early July. During this time it is worked greedily by the bees. It thus provides a source of nectar before sweet clover begins to blossom. If cut for hay, a second period of bloom is provided after the peak of the sweet clover.

Seed of sainfoin at present is not available in quantity but it is being increased.

To summarize, it may be said that sainfoin probably will find a place in western agriculture—as a supplement to alfalfa and sweet clover, particularly as

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a bee forage. It provides a reasonably good quality hay and pasture. If seed producers can keep the cost of seed in line there should be a steady demand in this field of production. Further work on strain testing, and testing for local adaptation is needed.

(For some years Dr. Britten has been engaged in forage crop investigations at the Dominion Experimental Farm, Brandon. He has recently left to take up new work at the University of Hawaii, Honolulu, in the Department of Botany).

Changing to Heavy Duty Oil

THE Dominion Experimental Station at Swift Current recommends heavy duty oils under heavy duty tractor-load conditions, and wherever oils are not giving satisfactory service. Recently such heavy duty oils have become available for use in any type of engine and under extreme service conditions, whether for use in tractors, trucks or automobiles.

When changing over to a heavy duty oil, however, it appears that special precautions are necessary. Because of accumulation of sludge, gum and carbon, heavy duty oil will become dark in a short period, owing to the fact that the carbon becomes suspended in the oil. If the engine is very dirty, the oil system may become blocked, resulting in a burnt bearing. Consequently, a system of change-over is recommended as follows: 1, Fill with heavy duty oil, operate for 15 minutes, and drain out; 2, Refill with heavy duty oil, operate two hours and drain; 3, Refill again, and operate, draining after 10 hours of operation; 4, Refill, change the filter cartridge, and operate as recommended by the instruction book for future oil changes. It is particularly recommended that no other oil be mixed with the heavy duty oil.

Use the Land Well

DURING recent years the term "land use" has been heard with increasing frequency. As now used, it means that the land should be cropped to the best advantage, not only from the point of view of the owner, but of the land itself, rather than put to any use at all, regardless of its long-time effect.

For many years past, soil surveys have been undertaken in the three prairie provinces particularly; and most of these provinces have been gone over and mapped as to the types of soil to be found in particular districts. More recently, attempts have been made on a small scale to conduct surveys of a different kind, namely, surveys indicating the use which is being made of the land. In Saskatchewan, for example, a survey of six municipalities in southwestern Saskatchewan was undertaken two years ago by the Provincial Department of Agriculture, in co-operation with the Dominion Experimental Station, Swift Current. The total area involved covered more than 1,500,000 acres.

The survey showed that normal crops such as wheat, oats, barley and flax were seeded on more than a million acres of this land each year. Cultivated acreage seeded to perennial grasses amounted to no more than 20,680 acres. There were 492,000 acres of uncultivated grassland, 30,980 acres of abandoned farm land, and 18,000 acres of waste land. Of the uncultivated grassland, amounting to nearly a half million acres, only 12,600 acres were classified as hay meadows.

It was also recorded that, included in the cultivated acreage, was stoney, sandy, alkaline or extremely rolling land accounting for nearly one-fifth of the total. Also, of the 20,680 acres seeded to perennial grasses, only 3,000 acres were used for hay production.

It was obvious that with this distribu-

tion of land use, farming in this area could not be as profitable as it should be. The uncultivated land, mostly suitable only for grazing, does not now produce enough feed for the stock pasturing on it. The abandoned land should be brought under grass and more acreage seeded to cultivated grasses in the opinion of those conducting the survey, not only to provide additional feed supplies, but to check soil losses from wind and water erosion. It is also reported that some land that is now under cultivation should be abandoned and turned into community pastures and areas for the development of winter feed reserves.

Eventually, perhaps, all of the settled areas of western Canada will be studied and surveyed for the purpose of developing a more efficient use of the soil. Such study should result, not only in the improvement of the soil fertility of a district, but in a wider and more profitable cropping system and a general increase in prosperity throughout the district.

Prepare for Dry Years

NO one wants to predict calamity, but the short crop in much of Saskatchewan and part of Alberta this year emphasizes the fact that for several years western Canada enjoyed good crops, and that the disappointment in 1947 was to be expected sometime.

Not only are extremes of weather likely to be experienced in the prairie provinces in a single year, as for example the drought in Saskatchewan and the excess moisture in Manitoba, but dry weather can come two years or even more in succession. It happened in the '30's with disastrous effect, and it can happen again. Everyone hopes that it will never again be as long-lasting, or will occur simultaneously with a world-wide collapse of prices.

We cannot predict the weather, but we can do something to prepare for it. The one vital thing that we can do to the very best of our ability is to conserve all the moisture that comes to us. The prairie provinces are a part of the interior plains area, which extends from the Gulf of Mexico through to the Arctic Circle, and the Mackenzie River Basin. The Great Plains of the prairie provinces and the northwestern States are characterized by recurring periods of drought. We are not able to forecast when the next long drought will appear, nor how long the period will be. We cannot tell when a drought will start, or when it will begin to be felt in a particular community. We do know that unless the climate itself changes substantially, a drought will come.

It is not only the loss of immediate crops, and personal privation, that enters into difficulties created by protracted dry weather; it is the damage to the land itself. Long droughts ruin large acreages of land. Topsoil is blown off knolls and level areas. Short crops do not provide enough organic matter to make an adequate trash cover, or keep the soil in a condition to absorb and retain the maximum amount of moisture, once the process of destruction has got well started. The ruin of much good land and of the farmers who till it, is inevitable during a long drought period, unless careful preparations are made to guard against it.

It isn't so much the amount of rainfall which counts, as the amount of water which soaks into the ground and is held there until the crops can use it. Conserving water is a three-in-one problem: First, to get the water to soak into the ground and to stop run-off; second, to stop the evaporation of water from the soil; and third, to keep the weeds from using the moisture that has been conserved.

Cultivating and tilling with the contour of the soil will help to stop run-off.

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Anturat is the new Dr. Hess rat killer, made especially for farm use. Its killing agent is antu. It can be used both as a baiting poison and a tracking poison. (To use as a tracking poison, just sprinkle in rat holes and runs.)

Anturat is less toxic to livestock and poultry than most commonly used rat poisons.

We wish you could see all the letters telling us about the effectiveness of Anturat as a rat killer. Plenty of farmers have put it out in the evening and found dead rats all over the place next morning. Get Anturat — get the 8-oz. farm size from your Dr. Hess dealer and go after those rats. Hess & Clark, Ltd., London, Ontario.

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This handy small lantern has high candlepower brilliance. Only 11½" high; holds fuel for 7 to 9 hours of steady light. Available in gasoline and kerosene models.

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In the United States, many thousands of acres have now been reorganized on a contour basis. A trash cover will permit more water to get into the ground and will check evaporation. Well-managed summerfallow will help to store water and keep the weeds from using it up. Special tillage implements where necessary, such as the basin lister, will help under some circumstances. Shel-

terbelts will catch snowdrifts and also check some of the strong winds that evaporate soil moisture. Devices for spreading run-off water, and contour furrows are often helpful.

The time to think about water conservation is all the time . . . but a particularly good time is just after harvest and before the fall rains have started.

A Home-made Grain Drier

This grain drier has been profitable but is difficult to construct

By J. R. McFALL

TOUGH and damp grain is often a problem to grain farmers. Elevator companies have established large driers at their terminal plants. This does not always meet the need of the individual farmer, especially when elevator space is limited and he is required to store grains on his own farm. Then too, there is always danger of grain spoilage before the grain can be assembled and moved to the drier. The answer is to dry grain on the farm.

C. A. Fawcett and Sons of Consort, Alberta, have solved this problem to their own satisfaction. Six years ago they started experimental work with a small, farm drying plant. Today it has been perfected to a point where they have no worries regarding a few loads of damp or tough grain. During the years they have dried over 32,000 bushels.

The drier has paid for itself many times over, in the opinion of the Fawcetts. It enables them to start the combines rolling a few days early each fall. It allows them to start operations earlier in the morning; and less delay is caused by showers. The only harvest delays are when the grain is too wet to thresh properly, or when the field are too soft and muddy for the tractor and combine.

In this way one combine can handle a larger acreage, and there is less danger of standing grain being left out all winter. For that matter some crops have been harvested with snow on the ground.

The general idea is simple. A chinook wind is imitated by driving heated air through a six-inch column of wheat by means of an old thresher straw blower. Tough grain from 15 to 17 per cent moisture can be dried in 6 to 18 hours, but grain with 20 per cent moisture takes about 24 hours.

Operating costs per hour are a few shovels of coal, and gas sufficient to

operate the six-horse power engine that drives the blowers.

Little handling of grain is necessary as it is elevated into the drier by a 20-foot grain loader. After the wheat is dry, a truck is backed under the drier and slides at the bottom of the wheat column pulled.

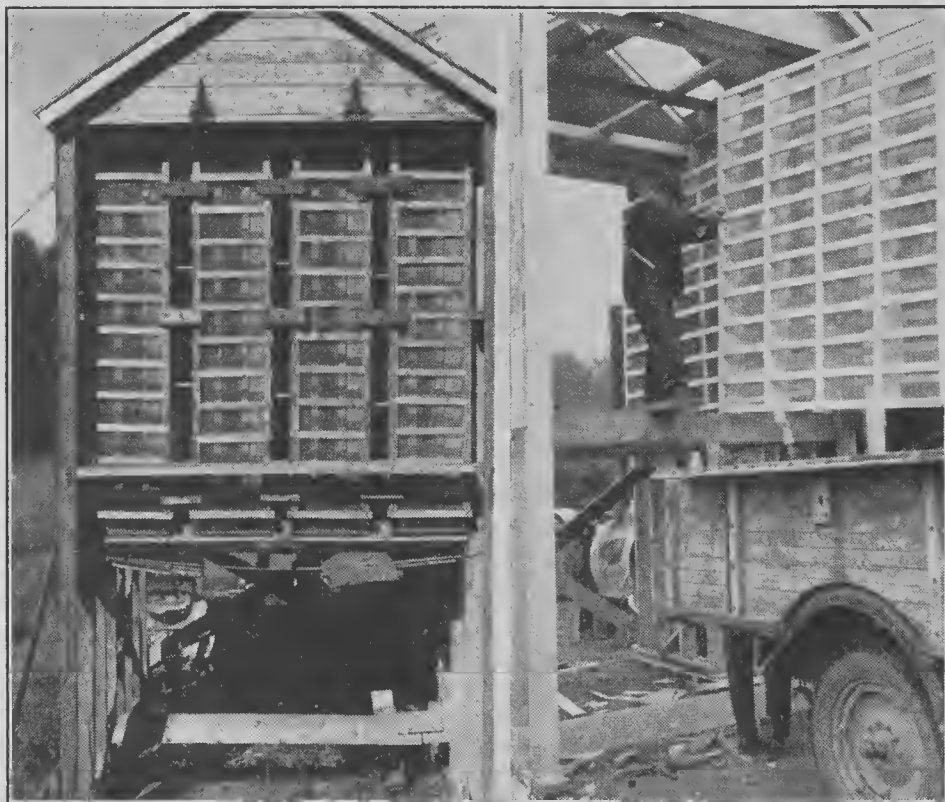
Construction cost for the first unit (250-bushel capacity) was about \$500. This included galvanized fly screen, lumber, labor, and other costs. This unit was not large enough to handle all the damp grain from a 12-foot combine, so a second unit was added a few years ago. Today this plant is looked upon as a necessary part of the harvesting equipment.

The design and construction of this drier is far from simple, as a number of farmers who tried to build one for themselves have found. After spending considerable money and time on materials and labor, it was found that it leaked air, or did not work satisfactorily; which is the reason why no plans for home-made driers are available.

Care, too, must be exercised in operating these units to see that the grain is not exposed to excessive heat, or there will be danger of scorching and killing germination.

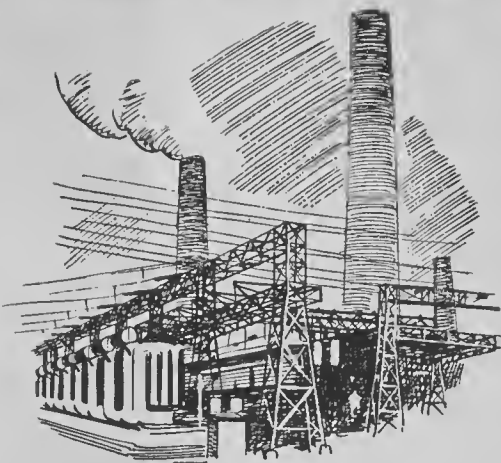
While this particular plant has given wonderful satisfaction, agricultural authorities are hesitant about making any general recommendations as to its use, because the original cost is high and it requires careful attention when in use.

It is doubtful if materials are now available for constructing such a plant, but if interested farmers care to correspond with me, addressing letters to the Secretary, Alberta Federation of Agriculture, 525 Loughheed Building, Calgary, Alta., their letters will be given due consideration. It is possible that these units could be built under contract by some manufacturing company.



Left: The Fawcett grain drier ready for enclosure. Right: C. A. Fawcett loads the wire chimneys into the shell during construction.

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HORTICULTURE



William Godfrey, retired head gardener at the Dominion Experimental Station, Morden, was given the Stevenson Memorial Award recently at Morden.

William Godfrey—An Appreciation

THE August, 1946 issue of The Country Guide carried a brief note recording the retirement on the previous June 21, of William Godfrey, head gardener of the Dominion Experimental Station, Morden. Since his retirement, Mr. Godfrey has continued to reside at Morden and has kept himself busy cultivating not only his own garden, but the fruits of a cultivated mind.

In August of this year, as mentioned briefly elsewhere in this issue, he was the recipient of the Stevenson Award for meritorious service to horticulture, an award which was established as a memorial to the life and services of the late A. P. Stevenson of Morden, and is administered by a committee set up by the Manitoba Horticultural Association and the Manitoba Department of Agriculture.

His friend and co-worker, W. R. Leslie, superintendent of the Morden Station, calls him a philosopher. Mr. Godfrey admits to being impulsive, because he says he came to Canada as the result of impulsively answering an advertisement by William A. Munro, then superintendent of the Dominion Experimental Station at Rosthern, Saskatchewan, and now a nurseryman a mile or two south of Prince Albert.

On his arrival on March 23, 1913, it was 23 degrees below zero, and if he had had enough money, he would have gone back to England. Though experienced in gardening in the Old Country since the age of 12, he thought the caragana peeping out of the snow were gooseberries.

Born amid the grime and smoke of Newcastle-on-Tyne, William Godfrey in early years sought wider experience in London. He became a journeyman in Victoria and Paradise Nurseries situated in Upper Holloway, London; served as a glasshouse foreman on a Hertfordshire estate, and was well started on his career when he came to Canada.

In 1915 he joined the 65th Battalion at Saskatoon, fought with the 46th in France and Belgium, 1916-1918, returned to Rosthern in 1919 and transferred to Morden in 1923. During the 23 years of his work at Morden he performed, in the words of Mr. Leslie, "many, many good works." No one could better sense his contribution to and from the Morden Station than Mr. Leslie himself, who says: "He has been architect of the rock garden, rose garden, lilies, iris, peonies and mixed borders. The four greenhouses have taken form under his regime. Mr. Godfrey has extended garden knowledge by his boldness of resolve in propagation and culture of ornamental plants, in his scientific breeding of roses and herbaceous perennials, and through his writings and addresses."

His ability to build a bouquet is unique; his command of fine English is the delight of his friends and readers. As a community citizen he served for a number of years as president of the Morden Horticultural Society. As chairman of the Civic Improvement Committee of the local Board of Trade: as president of the Canadian Legion, Morden Branch; and as director on the board of the local hospital."

Not long before his retirement he completed an excellent bulletin on house plants. On the day of his retirement, one of his roses was named The Prairie Wren. A former production of his, also a rose, had been named Prairie Sailor and these two joined other important productions which include the Morden pink lythrum and the Morden Maid and Nasturtium gladioli. In 1928, he began a long, thorough program of rose breeding, making in the interim a great many crosses, from which 10,000 cross-breeds had bloomed up to the time of his retirement. As a gesture of the esteem in which his services were held by the station where he worked so productively for so many years, the ornamental driveway which curves through the Morden Station was named Godfrey Drive.

Mr. Godfrey is a quiet, unassuming, steady-going and conscientious individual. Though not in the best of health for some time prior to his retirement, he kept abreast of horticultural progress and was deeply versed in the love of his chosen calling. He belonged to the Order of the Green Thumb, and fortified his natural gift by painstaking and conscientious effort. It is the wish of The Country Guide and, we are sure, of the many friends and acquaintances who came to appreciate his work at the Morden Station, that time may deal gently with him in his retirement, and that the recognition of merit which has recently come to him may rest long upon his shoulders.

Plant Peonies in September

MANY people are very fond of the showy and very ancient peony as a perennial flower for the garden. The foliage is attractive, the plants are hardy, persistent and reasonably healthy, and they are fairly easy to grow.

Some gardens carry peonies planted in masses so that during the blooming season a striking mass of bloom is presented. Others like individual plants which will grow to the size of a small shrub and thus have a distribution of bloom throughout the garden. A large number of varieties are available, and there is considerable choice in color.



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Generally speaking, peonies like a wide variety of soil types, but soil ought to be well nourished, in good condition and well drained. Plenty of sunlight, at least six hours a day, is recommended.

The best time for planting is about September 15. By this time the root buds will have matured and there will be time enough before freeze-up for the fresh soil to settle and the plants to become somewhat established. Planting later or into October is quite possible, but is not likely to be so successful.

The roots of peonies are planted, and a portion containing from three to five buds is preferred, where the buds are found on good healthy roots about an inch in diameter. If roots containing only one bud are used, an extra year will probably be required before good bloom is secured.

For best success, it is well to remove the soil from a hole about two or two and a half feet square and two feet deep, and to fill it with nine parts of good topsoil and one part of well-rotted manure. A handful of bone meal per plant will be helpful, mixed with the soil. The roots should be planted so that at least an inch of soil and not more than three inches will cover the topmost bud.

Where space is available, peonies should be planted from three and a half to four feet apart. If the space is limited, they may be planted not closer than two and a half feet. Later in the fall, after planting and before freeze-up, it is a wise precaution to cover, for the first winter, with straw or leaves held in place by branches or some other covering, to prevent the material from blowing away. Older peony plants should have their tops cut off and entirely removed and burned as soon as frost kills the foliage in the fall.

Why Fruit Trees Do Not Bear

OCCASIONALLY readers will have had difficulty in securing crops of fruit from individual fruit trees, whether of apple, plum, pear or cherry, and it is well to know that this unfortunate and disappointing experience may result from several causes. Sometimes growers are disappointed because young trees do not come into bearing as soon as expected. Some varieties will bear sooner after planting than others, and occasionally it happens that a late-bearing tree, when it does set fruit, is found to be of a different variety than the one it was thought to be.

In other cases, late bearing may be due to mistaken kindness on the part of the owner. Too rich soil, or too much moisture may induce in some trees a heavy vegetative growth, which directs the attention of the tree away from fruiting, to the mere production of leaves and branches. This is why experienced growers sometimes girdle the trunks of young trees by cutting away a small section of the bark so as to halt the tendency to vegetative growth and induce fruit production.

Many trees which blossom more or less freely, fail to set fruit. In western Canada, a very frequent cause of this is the inability of a particular variety to fertilize itself, and the absence of another nearby variety of the same kind of fruit, which will cross-fertilize successfully. Pollination is performed for the most part by insects, and unfavorable weather at blossom time, during which the insects do not work readily, frequently prevents the setting of fruit. Sometimes, too, the blossoms may be pollinated satisfactorily, but the weather may be so cool immediately afterward that the pollen tubes do not grow rapidly enough to effect fertilization at the base of the flower, before the pistil is dried up.

Sometimes trees do not bear fruit because the fruit buds have been injured during the winter, or even as a result of frost at blossoming time. A very severe drought will not only increase

the normal June drop of young fruit, but if it is severe enough, it may dry up the fruit buds and bring about a complete loss of the crop. If the trees can be irrigated in late October before freeze-up, it is sometimes a substantial means of helping out the following year's crop.

Dr. Shoemaker's Book on Vegetables

A NEW and business-like book entitled "Vegetable Growing" has been written by Dr. J. S. Shoemaker, formerly head of the Department of Horticulture, University of Alberta and now head of the corresponding department in the Ontario Agricultural College, Guelph. The author's experience has been about equally divided between the United States and Canada, and the book is business-like because no space is wasted, nor any of the reader's time, with chapters on generalities such as are often found in "know-how" books of this kind.

The book is fairly well illustrated, attractively bound and printed, consists of about 500 pages and is divided into chapters principally devoted to groups of more or less similar vegetable crops and their culture. In addition to a chapter on vegetable seed production and another on perennial vegetable crops, there are separate chapters on corn, root, legume, bulb, salad and vine crops.

Red Lilies

BEFORE the Western Red lily (we call it Tiger lily) became the emblem of our province, before indeed, I was old enough to know what the word means, my parents taught my brothers and sisters and me high ideals concerning our beautiful flowers. We learned as soon as we learned to walk, to turn our footsteps toward nature, and we wandered—alone, by twos and threes, or the whole family together, across the railway track and down the ravine to the lake.

Down along Four Mile Lake, as along other small lakes where there is seldom water in July, the Tiger lily grew brilliant and beautiful. We prized it highly—among all our flowers perhaps the most highly, probably because five of us are redheads and our vanity nourished on flattering comparisons.

At any rate, we love the Western Red lily and it's a love that will "never, never die."

According to their way of teaching, Mom and Dad did the things when we were small that they expected us to do when we grew up. When the lilies grew thick, we picked some for our table, when they were only scattered among the grasses, we left them there "for next year." It was not conscious conservation. It was the instinct of preservation born in men who love the soil.

With an old Bennett wagon and a team of mules that were colts in '16, we didn't get very far from home. Our recreation depended on nature. The thirties were hard years for the red lilies. They became our emblem unconsciously. We dug up a couple of roots for our flower bed, but they didn't survive the summer heat. We found them only near the lake, and they slowly disappeared from there.

Now we are older, and greater responsibilities take larger shares of our time. But though visits to nature are less frequent, they are still a part of our lives. Last year we wandered along the lake in search of berries as we have always done. And last year, after years of absence, there were lilies! It was not premeditated, a scientific thought or action. It was a rebirth of our childhood. We gazed on them, gloriously alive above the sunscorched grasses. Spontaneously we knelt to touch their velvet dresses—and rose to leave them glowing in the sunset.—Edith Allenbrand, Handel, Sask.

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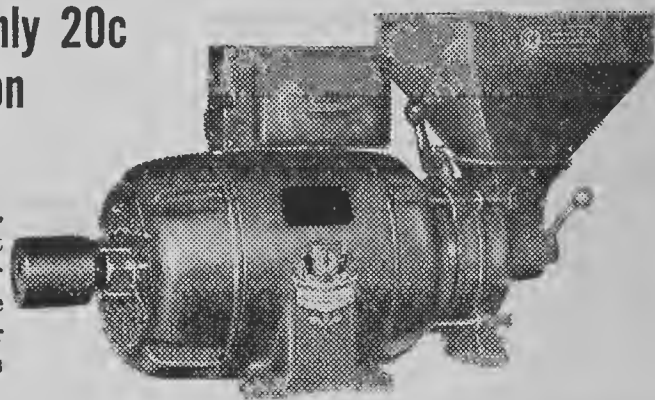
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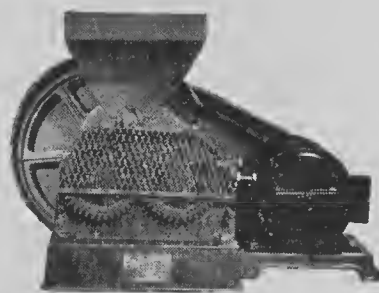
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Little Ideas for the Autumn

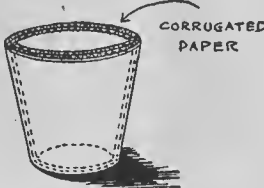
Things to make on rainy days and in spare hours

Folding Trellis

If you have roses or other trellis-growing vines that require winter protection, try this: Instead of taking the vines off the trellis, saw off the supporting members near the ground and attach strap hinges. This will enable you to lay the trellis, including the vines, down on the ground where they can readily be covered. Next spring you can bolt a piece of flat iron to the trellis to hold it upright again.

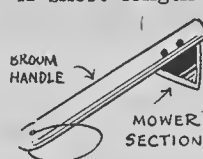
For Gathering Eggs

To reduce breakage when gathering eggs, line the egg bucket with corrugated cardboard. Place three thicknesses in the bottom but two thicknesses will do for the sides. After the job of fitting and cutting is completed, the whole business can be glued together so that it can be taken out in one piece and the bucket used for other purposes.—D.C.R.



Bundle Tie Cutter

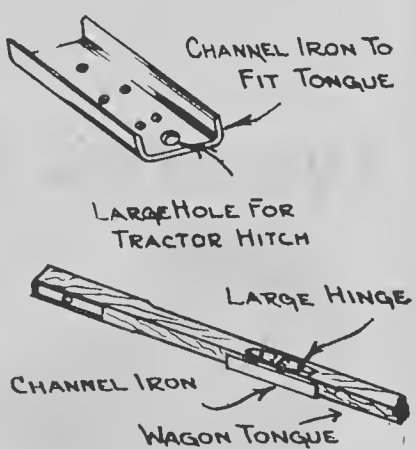
A short length of old broom handle has a kerf cut in it at one end with a rip saw. Then an old mower knife section is inserted in the kerf and riveted firmly. In the other end a gimlet hole is bored and a loop of cord or leather inserted. There you have a very good corn or grain bundle tie cutter.—Mrs. Anton Garacke.



Long and Short Tongue

A.C.K. writes: I am sending you a convertible long and short tongue which can be used either for horses or tractor, and still is strong and solid for either use.

First cut the tongue in two so the front part is slightly shorter than the rear part, and put a heavy hinge on top of the tongue. Then cut a piece of channel iron which will fit the bottom part of the tongue at the joint. Put three or four bolts through the back part of



the hinge and also through the tongue and the channel iron underneath. Next put two bolts through the front part of the hinge and also through the tongue, but not through the channel iron. The heads of these two bolts should be down and should be countersunk in the tongue just enough to be flush. Then put a large bolt through the front part of the hinge and down through the tongue and iron.

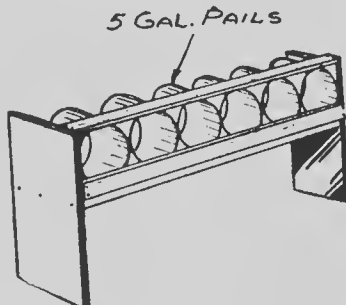
When you want a long tongue, it is used as just described. When you want a short tractor tongue to pull the binder, simply take out the front large bolt, fold the front end of tongue back to the other part, and fasten the tractor hitch in the large hole in the channel iron.

This seems a simple but practical arrangement. The channel iron should be at least 18 inches long and should have

an additional bolt through iron and tongue well at the rear so as to make the joint stiff enough sideways so there will be no danger in turning.—I.W.D.

Pail Nests

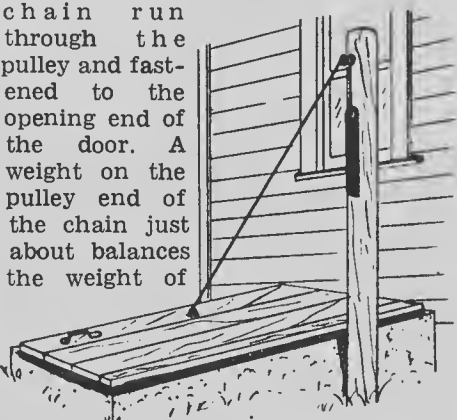
Here is a sketch of a handy idea we



used when we were short of lumber for nests. Nail a plank to two wide boards and place against wall of hen house. On the plank nail some old five-gallon pails, with a narrow board in front to hold the straw in. Another narrow board on top will hold the pails more securely.—I.W.D.

Outside Cellar Door

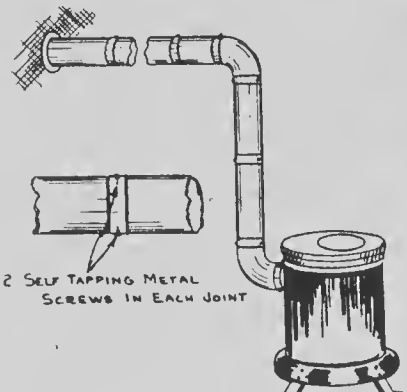
A stout post is set next to the cellar-way with a pulley fastened near the top and a light chain run through the pulley and fastened to the opening end of the door. A weight on the pulley end of the chain just about balances the weight of



the door. The door may be made in two sections with a device like this on either side. For ordinary passing, only half the door is used as this is better than having to open the whole door. A strip over the middle joint keeps out rain and snow.—I.W.D.

Stove Pipe Lock

The diagram shows how one man solved a problem. "I put the pipes together as they should be with the seams turned right and so on. Then I took a one-eighth inch or smaller drill and drilled a hole on the top and bottom at each joint and turned a small self-tapping metal screw into each hole. These are much used now for sheet metal work, but small lag screws can be used if the others are not available. These screws should be used at each joint and at the stove connection. They are quickly put in and I find the pipes never sag, always



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POULTRY

Conducted by Prof. W. J. RAE, University of Saskatchewan



[Guide photo.]

These Light Sussex hens do well for the Peter Jamiesons of Alix, Alberta.

Housing the Pullets

BY September the early hatched pullets should be safely in their winter quarters. Pullets hatched in March will be six months old and should be just getting nicely into lay. If the maximum returns are to be expected from a flock of pullets, they must be well enough grown to support at least an average of 60 per cent production from early September until the end of January.

The reason for stressing September to January is that these months correspond with the period of highest egg prices. The British egg contract calls for the payment of a substantial premium for fall eggs, therefore the only way to get this premium is to produce lots of eggs while the premium is being paid. Don't wait until Christmas before thinking about getting the pullets to lay. Get them housed early, and once they are in the laying house, keep them in and feed them a well-balanced laying mash mixture, supplemented by sufficient whole grain to keep up body weight. It is only by giving the birds special attention in the fall that profits can be made. By getting all the eggs possible in the fall months the flock can get through the low price period successfully and show a nice profit at the end of the year. The pullets want to lay. All they need is a bit of encouragement from their owner.

The Trend of Laying House Design

BACK in the days when the keeping of poultry was altogether a sideline, and flocks of more than 50 to 75 birds were rare, the houses were small and narrow. Laying houses of 10 to 12 feet in depth were quite common. There was usually plenty of glass for light, but very little ventilation or change of air was provided, other than that which leaked by the cracks in the walls or around the windows. It became apparent that such houses were unduly warm in the summer and abnormally cold in winter.

Gradually a partially open front house became popular, because with the better ventilation which it provided the birds were more comfortable.

Today the trend is towards multiple deck houses with quite restricted systems of ventilation. These are warmer and drier. The secret of this warmth and dryness is insulation and the changed design. After experimenting with the 20-foot-wide poultry house, it was found that so much better results were obtained than with the narrower building, that the wider building was advocated. At the present time poultry houses 24, 30 and even 40 feet wide are being built and as the width increases the comfort of the hen increases proportionately. This means a

decreasing amount of window glass per hen, but all that is needed is sufficient light for the hen to see her feed. Properly balanced diets and artificial lighting to lengthen the winter days are all that is necessary to make the hens produce well in these modern houses.

An Appreciation

POUULTY Research has been handicapped for many years by the lack of funds and facilities. Most of the support has come through the appropriation of public funds to Dominion and Provincial institutions, with very little outside help from commercial organizations. Whenever such assistance is forthcoming it is greatly appreciated by those whose job it is to organize and conduct research in the poultry field. The most recent gift for research work comes from the Saskatchewan Approved Hatchery Association. This organization has seen fit to offer a two-year scholarship valued at \$600 per year, to a worthy student desirous of carrying on a poultry research project in partial fulfillment of the requirements for a Master of Science degree. The research work must be carried on at the University of Saskatchewan. The Poultry Department of this institution is deeply appreciative of the generosity of the hatcherymen.

Efficiency in Production

WHILE we have a market for every egg we can possibly produce in 1947, there is one dark cloud in the sky. This little cloudiness is putting in an appearance in the form of a shortage in certain feedstuffs necessary for the maintenance of high production. The chief shortage is that of protein supplements, such as meat meal, fish meal and milk. The available supplies of these feeds should be conserved as much as possible. Do not waste any one of them by feeding poor chickens. Only the early hatched, well-developed pullets and the carefully selected yearling hens should get any of these feeds. A careful selection should be made of the birds to keep this winter. Market off the poorer producers and concentrate on the good ones. Study the feeding program so that the hens are fed a balanced diet. A properly regulated diet will do much to promote high average flock production. Provincial universities and experiment stations will be pleased to help you plan the winter feeding program for your hens. A hen which lays only 100 eggs per year requires about eight pounds of feed per dozen eggs produced, whereas a hen whose production is 200 eggs per year needs only five pounds of feed per dozen eggs laid.

In Sunshine



or Snow Storms

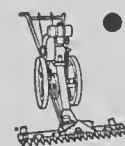
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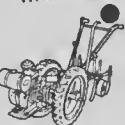
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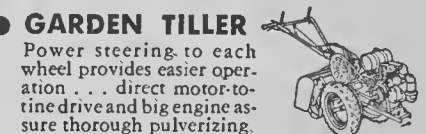
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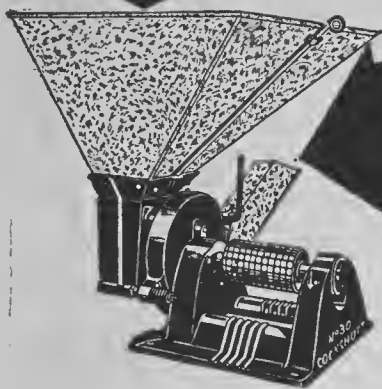
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Monthly

Delivery Quotas

The Canadian Wheat Board has established a preliminary general quota on deliveries of wheat of 10 bushels per seeded acre. Open deliveries, however, have been established at a large list of points in Saskatchewan where crops are light and there is no need for allocating space among producers. At other points quotas have been set at 15 and 20 bushels per acre.

There will be no quota restrictions on flax and rye deliveries for the current year. With respect to oats and barley, no quotas are being imposed at the present time although they may, if considered necessary, be established later in the year.

Quotas on wheat will, of course, be enlarged at individual stations as rapidly as possible. Quotas represent merely an allocation of delivery space for a certain time. They are not to be used for any over-all restriction of wheat deliveries. Not only is every bushel of wheat which can be delivered this year needed, but the government has announced that up to the end of the 1949-1950 crop year all wheat, which can be delivered by farmers and for which space can be found, will be accepted. It is interesting to note that delivery quotas for wheat are now based on acreage seeded to wheat. The "authorized acreage" formerly used as a basis has disappeared under provisions of amendments to the Canada Grain Act, passed at the last session of parliament.

Last season delivery quotas on oats and barley prevailed for a considerable time. That was so elevator and transportation space could be conserved for wheat, the need for which, during fall months, was greater than for coarse grains. This year there is an urgent need for shipment of feed grains to eastern Canada. In consequence, deliveries of oats and barley are to be unrestricted for a time. It is hoped that there can be shipped from country elevators, before the end of November, practically all the oats and barley which producers deliver up to that time.

It may be expected that delivery quotas on wheat will be increased rapidly at a great many points. The need for prompt movement of all grains is so great that every effort will be made towards rapid shipment. There is a danger, if country elevator space remains unoccupied, due to unfilled quotas, of delaying rail movements to terminal elevators.

The "World Price" of Wheat

What is the world price of wheat? No one is very sure what exact meaning can be given to the words "world price," under such conditions as now prevail, when there are many different prices for wheat. Nevertheless the governments of Canada and of Great Britain will shortly have to determine what those words "world price" mean to them. That determination will play its part in establishing the price that is to be paid by Great Britain to Canada during 1948-1949, the third year of the British agreement, for 140 million bushels of wheat. Under the contract between Canada and Great Britain, by which this country undertook to sell 600 million bushels of wheat during the four years, the basic price for 160 million bushels during each of the first two years was set at \$1.55 for Northern in lakehead terminals. For the third year, during which 140 million bushels are to be sold, a minimum price basis of \$1.25 was established. It was also provided that the actual price to be paid, which evidently might be higher than \$1.25 per bushel, should be nego-

tiated between Canada and Great Britain before December 31st, 1947.

Similarly, the actual price to be paid for the fourth year, subject to a minimum basis of \$1.00 per bushel, is to be negotiated before December 31st, 1948. The contract goes on to say that in determining prices for those two crop years "The United Kingdom government will have regard to any differences in prices paid under the agreement during the first two years and the world's prices for wheat in those years."

A short time ago the Canadian Minister of Trade and Commerce, the Hon. J. A. MacKinnon, stated in the House of Commons that the "world price" during the first year of the contract had been 77 cents above the \$1.55 at which Canada has been selling wheat to Great Britain. That would make it for 1946-1947 \$2.32. The Hon. Mr. MacKinnon in his use of those words meant the price at which Canada has sold wheat to countries other than Great Britain. That price has at times been over \$3.00 per bushel and only recently was \$2.60 per bushel. That price, for Class 2 wheat, as it is called, fluctuates from day to day in accordance with fluctuations on the Chicago market. The Canadian price, however, is frequently considerably higher than the price quoted at the same time for Chicago wheat futures. In determining the Class 2 price, the Canadian Wheat Board has taken into account premiums for cash wheat prevailing at Chicago, Kansas City, or other market centres in the United States, and evidently also has had regard to the somewhat higher quality of Canadian wheat. It should be argued, of course, that in determining a world price there should be included in the calculation the 160 million bushels of wheat sold to Great Britain at \$1.55, or even the fact that Canadian consumers of flour had been able to buy it at a price based at 77½ cents per bushel for wheat. But similarly, it might be claimed that there should be brought into the calculation the much higher prices for wheat paid to domestic producers in Great Britain and in various countries of continental Europe. Also account could be taken of the very high prices which Argentina has been able to get from other countries. No exact information as to such prices is publicly available but Argentina has apparently been able to get, from time to time, the equivalent of from \$3.50 to \$5.00 per bushel.

Suppose, however, that Great Britain and Canada are able to agree that the world price, during the first year of the agreement, was \$2.32 per bushel. They will still be far from arriving at the actual price to be paid for 1948-1949. That is because there is ambiguity in the undertaking that "The United Kingdom government will have regard" to the world price. Some people read the agreement as meaning that because Great Britain secured a price advantage, as compared with the world price, of approximately \$120,000,000 during the first year, that amount is to be figured into the price for 140 million bushels during the third year, which would mean adding 80 cents per bushel to the price that would otherwise have to be made. If 80 cents were added to \$1.25 it would mean a price of \$2.05. But even if 80 cents is to be added to something, is it necessarily to \$1.25? Almost certainly not, it would be answered, if, when the actual price is negotiated it looks as if the world price is going to be below \$1.25. But suppose that while negotiations are in progress it looks as if the world price for 1948-1949 is going to be higher, perhaps \$2.00 per bushel. Can the agreement be

Commentary

interpreted as meaning that Great Britain would then pay, during the third year of the contract, well over \$2.50 per bushel.

It would be rash to predict that the British negotiators will agree to anything of that sort. Quite possibly they will say that there are many other things to which they will have to have regard in addition to the price discrepancy during 1946-1947. Some informed Britishers have suggested that a counter claim might be put forward because during the first year of the contract deliveries of Canadian wheat were slower than had been hoped for. On that account Great Britain found it necessary to buy some wheat from Argentina at a very high price, a fact for which they might, to some extent, want to hold Canada liable. Thus the high Argentine prices, instead of an argument for paying Canada more, might be used as an argument in the opposite direction. Then, of course, British ability to find Canadian dollars to pay for Canadian wheat, the price of which is established not in terms of sterling but in terms of Canadian dollars, may enter into the discussion.

No Premiums this Year on Durums and Red Winter Wheat

The Canadian Wheat Board, in establishing its initial prices for various grades of wheat this year, has put Durums and Red Winter wheat on the same basis as Red Spring wheat. Last year special circumstances enabled the Board to establish a premium of 10 cents per bushel on Red Winter at the beginning of the season. This was followed shortly by a corresponding premium on the Durum grades. The special market premiums for such grades no longer prevail, and the Canadian Wheat Board has made corresponding adjustment in its initial prices for the current season.

That brings up a question on which so far no pronouncement has been made by the Canadian Wheat Board. At the end of the five-year pooling period, in 1950, when payments are made on participation certificates, will all deliveries of Durums and Red Winters be brought to a uniform level, or will producers of those grades who marketed them last year retain a permanent advantage from the 10-cent premium which then prevailed? One interpretation of the Canadian Wheat Board Act would be that all producers of the same grade would be entitled to the same price no matter in which of the five-year periods their deliveries may have been made. On such a basis final payments on participation certificates issued while premiums prevailed, would have to be lower to offset the amount of premium.

Cereals Committee Faces World-Wide Shortage

The world-wide scarcity of food was emphasized when, during August, the Cereals Committee of the International Emergency Food Council met in Winnipeg, under the chairmanship of Mr. George McIvor, chairman of the Canadian Wheat Board. Thirty different countries were represented. The problem of the delegates was to consider allocation of cereals for export during the current crop year, under conditions when the demands of importing countries are greater by hundreds of millions of bushels than the quantity available to supply them.

The Cereals Committee, as a rule, meets in Washington, mainly because the grain which it has to allocate comes principally from the North American continent and preponderantly so

from the United States. The meeting in Canada was in recognition of the part this country plays in feeding the world. It had been planned two months in advance when there seemed to be a reasonable hope that Canada might have a wheat production this year of well over 500 million bushels. When the delegates assembled, however, they had to face the fact that in wheat, oats and barley combined, the export surplus of western Canada would be some 300 million bushels less than had earlier appeared to be a reasonable hope. Such a fall from yields formerly in prospect represented a severe loss to producers of western Canada. To consumers in other countries it represented a calamity, and the fact that hunger and distress from malnutrition over great areas of the world would be intensified.

Earlier hopes had prevailed that the tremendous wheat crop of the United States, harvest of which is now being completed, and which will run not far short of 1,500 million bushels, might have gone far to overcome the world deficiency of supplies. Outside of the United States, however, Russia appears to be the only country with a large wheat crop this year. The severe weather of last winter did enormous damage to the winter wheat and rye crops of Europe and such damage was intensified by summer drought. Efforts to relieve the situation by reseeding land in the spring, proved largely unavailing. That was particularly so in France which had secured spring wheat seed from Canada when it was discovered that a large part of the winter wheat acreage was a total loss.

Difficulties of the situation are intensified by poor crops of wheat in China and in India, and by corresponding deficiencies in the supply of rice, the principal food of large parts of the populations of those countries. Probably every delegate from an importing country had hoped that his visit to Winnipeg might result in obtaining increased supplies of wheat or flour from Canada. Every delegate was doomed to disappointment because the extent of the damage which had occurred to the Canadian crop was only fully manifest about the time the meeting convened.

It will be difficult for Canada to find more than 40 or 50 million bushels of wheat for export to countries other than Great Britain during the current year. The carry-over and new crop combined give a total Canadian supply of not much more than 400 million bushels, of which at least 300 million bushels will be absorbed by Canadian requirements and the 160 million bushels to be furnished under agreement to Great Britain. The Canadian carry-over of old wheat at July 31st this year amounted to slightly over 80 million bushels. Some slight reduction of that is possible during the current year but it would be difficult, and indeed almost impossible, to get the Canadian carry-over down below 50 million bushels as at July 31st, 1948.

It is hoped that the United States may be able to export this year, to countries other than Great Britain, about 500 million bushels of wheat. To those countries, therefore, its importance as a supplier of wheat will appear to be about ten times that of Canada. Wheat exports from the United States may have to be cut down to some extent because of a shortage of feed grains and particularly of corn. Although the country produced about 500 million bushels more wheat than would have represented a reasonably good crop, corn production seems likely to fall short, by 500 million bushels, from the three-billion bushel return which is usually looked for in the United States.

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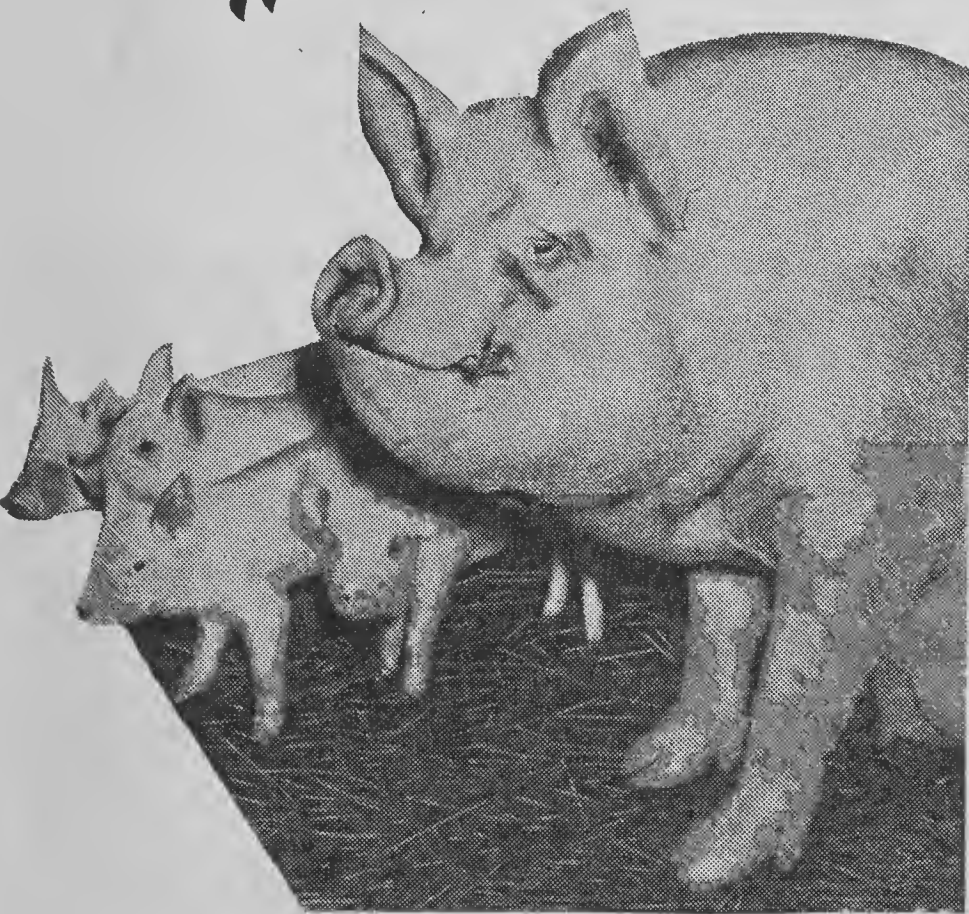
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In barns or hog pens, spray every surface thoroughly. Agitate the solution every 5 minutes to assure an even deposit of DDT. That's important, because the DDT deposit keeps on killing flies, mosquitoes, wasps and other pests that touch it for many weeks. As a Livestock Spray, 50% DDT Concentrate will not harm skin of cattle.

Green Cross 50% DDT Concentrate is economical. It pays for itself in healthier, more productive farm animals. It's no fire hazard, it's easily stored and it will not freeze or deteriorate.

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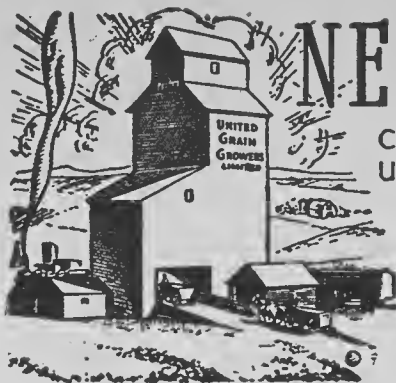
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NEIGHBORLY NEWS

Contributed by the Elevator Agents of
UNITED GRAIN GROWERS LIMITED

Senior Grain Buyer Retires

Senior agent in the service of the United Grain Growers Ltd., (Western Division), Walter Allcock recently turned over the keys to the Langdon elevator to retire on pension after 32 years—a term of employment that is probably a record among grain buyers for unbroken service at one point.

Born in England, Mr. Allcock came to Canada when a youth and gained his early experience on the McKinnon ranch at Langdon. Later, he homesteaded in that district and in 1915 he took over the Langdon elevator for the Alberta Farmers Co-operative Co. Ltd. When the amalgamation with the Grain Growers Grain Company took place in 1917, he remained in charge of the elevator and has been on the job ever since.

For 25 years he served as Secretary-Treasurer for both the U.F.A. Local No. 544, and the Langdon School District, and for 30 years as Secretary-Treasurer for the I.O.O.F. Before leaving Langdon Mr. and Mrs. Allcock were entertained at an outdoors farewell gathering at which they were the recipients of many expressions of goodwill from their numerous friends. After a holiday at the Pacific Coast, they plan to make their future home in Calgary. Walter is an ardent fisherman, and from now on the fish in the Bow River will have to be even more wary than usual.

Succeeding Mr. Allcock as U.G.G. agent at Langdon is C. H. Schwarz, who has been transferred from Chancellor. Mr. Schwarz has had many years experience in buying grain and is looking forward to meeting and serving U.G.G. customers at his new elevator. Mr. Schwarz also succeeds Mr. Allcock as Secretary-Treasurer for the Langdon U.F.A.—Langdon, Alberta.

Not "Catching"

Unlike the measles, certain fishermen's ability to catch fish does not necessarily become an epidemic. The fishermen around here have been getting some very good catches of trout in the Bow River. Six or eight of them in an evening is quite common, and some are quite large. Our genial hotel owner got one that fed a family of five for two meals.

These phenomenal catches enthused the local U.G.G. agent who figured on having a nice tasty lunch of fresh caught trout. He reports that he is still hungry. He caught no fish!—Blackie, Alta.

Hail Destruction

Tuesday, August 5th will long be remembered by many farmers who had some of the nicest stands of grain they have had in recent years cut down by a terrific hail storm. Coming in from the west, it moved east about six miles wide, gaining momentum as it swept along. By the time it had passed over town and reached a point several miles east, it was at its best, making a clean sweep of all the crops in its path.

Among the hardest hit farmers were W. E. Myers and Ross Walker.—Vulcan, Alta.

Progress—Despite the Drought

Despite the weather, this town has been progressing commendably. New places of business have been opened. A Cold Storage Locker Plant was opened early this summer—a real asset to the town and community. The long awaited

plans for electricity are expected to mature this fall, power being supplied by the Calgary Power Ltd. Also to be installed by the town in the near future is a water system. Natural gas for heating is an additional convenience of great potential value in the future.—Bow Island, Alta.

Baseball League Tournament

The Boundary Baseball League held its annual tournament at Taylorville. The league consists of seven teams—Del Bonita, Jefferson, Rinard, Spring Coulee, Twin River, Taylorville, and Woolford. Each team played seven games at home and seven away, followed by the tournament.

Over 400 cars passed at the gate, this being one of the largest crowds in attendance to cheer for their favorites.

A loud speaker was installed, over which a play by play description of the games was given. Refreshments were dispensed by the league executives. Many visitors were present from Cardston and other points.

At the close of the games, the presentation of a shield to the team winning the league was presented by R. J. Dawson, secretary-treasurer of the league, to the Del Bonita ball club. This shield will be presented to the team winning the most games each year.

Charlie Cheeseman of the C.A.A.A., and Dell Wood of Dell's Ltd., presented prizes to the players who got a three-base hit, a home run, strike-outs, and the most valuable player.

This was the most outstanding tournament held by the Boundary League during its 21 years of operation.—Jefferson, Alta.

Delegates Meet

Delegates from Saltcoats constituency held their convention in Calder. Mr. Lopston, Mr. Suyck and D. A. McKenzie were nominated for candidates. Mr. Lopston was elected. Mr. W. Tuckler, M.P., was a visitor at the convention.—Langenburg, Sask.

53rd Annual Exhibition

Saltcoats 53rd annual Agricultural Exhibition was held under ideal weather conditions. Although entries were much lighter than in previous years, quality was well maintained, especially in the cattle classes. Garden exhibits were not quite up to standard on account of the late spring.—Saltcoats, Sask.

Provincial Power Project

Saskatchewan Power Commission has unloaded a carload of line posts and have also taken applications for lights from the residents of Stornoway. It is reported that the power is to be put through in the near future. The boon of electric power will be a greatly appreciated convenience.—Stornoway, Sask.

Valuable Community Work

Extensive work has been done on the highway and side roads, nearly all culverts and bridges washed out by the recent storms have been repaired. The whole community are grateful to their respective councillors and the municipal reeve for the tremendous amount of time and hard work that it took to put our roads in condition again.

Mr. Alex Cleland has received his Massey-Harris Self-Propelled combine after a long wait of nearly two years.—Birdtail, Man.

Successful Exhibition

Alex Johnston, of Kelloe, exhibited eight head of his Holstein herd at the recent Brandon Exhibition and also

Portage la Prairie. He won a number prizes at both exhibitions.—*Kelloe, n.*

Successful Bazaar

A very successful Bazaar was held at the Parish Hall at Oakburn to provide funds for the new church which will, it is expected, be built in the near future. Approximately \$2,000 was realized at the bazaar for this purpose. The generous crowd and the splendid weather assisted in the success of the event.—*Oakburn, Man.*

For Light and Power

This district is at present being canvassed under the rural electrification scheme by the Manitoba Hydro. A large number of contracts have already been signed. A quota of 65 per cent of the farms has been set and if this is reached it is proposed to start work next spring.—*Penrith, Man.*

New Theatre Opened

Five hundred people attended the official opening of the new Strathclair Theatre. Reeve H. T. Morton conveyed the appreciation of the people of the district for the erection of such a magnificent building.—*Strathclair, Man.*

Successful Field Day

A Field Day was held recently on the farm of W. W. Casson in the Greenridge district when the plot looked after by Mr. Casson was inspected by R. A. Whiteman of the Provincial Extension Service. Mr. Casson was complimented on the fact that the plot was one of the best inspected this year. Among those attending was A. Thomson, representing the United Grain Growers Limited.—*Dominion City, Man.*

Crop Demonstration

A Field Day crop demonstration sponsored by the Homewood Junior Seed Growers was held here recently. Dr. Olson from the Manitoba University commented on the different varieties of cereal grains, grasses, etc. About 25 farmers were present. A flax test plot containing some new varieties sponsored by the United Grain Growers on the farm of Reg. Lutz, was also viewed with interest. This is among the best test plots in the province and much valuable information should be obtained from this particular plot when the department makes known the final results, yield, strength of straw, etc.—*Homewood, Man.*

Crop Inspection Tour

Dr. J. B. Harrington and associate, Professor L. H. Shebecki, of the University of Saskatchewan, recently made a tour of crop inspection in this northern district. They were accompanied by Dr. and Mrs. Satya R. Barooah, agricultural scientists from India, who are spending some time in Canada studying the various crops and growing conditions.

At Wadena they checked over a field of winter wheat growing on the farm of

Frank Fisher which has done remarkably well and should give a good yield.

At Archerwill the new type of fall rye was inspected with great interest as this rye came from Europe a number of years ago and was grown in the Carrot River district where on mossy soil it has given enormous yields as high as 58 bushels per acre on the farm of Jake Gentner.

Dr. Harrington is having this rye grown and tested at the University farm in Saskatoon and it appears to be fine for the districts with moss where other grains lodge and never ripen.

The U.G.G. are co-operating in the developing of this rye.—*Wadena, Sask.*

High River, Hollywood

High River is becoming quite famous these days. Hollywood actors, actresses, extras, and what have you—arriving daily by special train and embarking each evening via the same route to Calgary.

A picture entitled Rainbow Ridge is the answer and it is being filmed on the "E. P. Ranch," owned by the Duke of Windsor, and the famous "Stampede" Ranch," formerly owned by Guy Weadick of Calgary Stampede fame, and now owned by Messrs. Caldwell and Machin. Most of the filming to date has taken place on the Stampede Ranch, and the hosts plus a staff of waitresses and a chef formerly of the Hotel Bessborough, Saskatoon, serve meals at noon to between 100 and 125 guests, and house 25 of the company each night.

Joan Leslie is the feminine lead, with Jack Oakie and James Craig other stars in the picture.

* * *

About 7,000 people thronged through the gates to the Rodeo grounds for the first day of the High River Rodeo.

The three grandstands were full to overflowing. Bleachers and railings and every other vantage point was occupied with spectators galore.

The prize money attracted the best in riders from south of the border and neighboring provinces.

* * *

"Barbecue Deluxe" (See photo)

Roast Beef Deluxe was served up to about 200 members of the Hereford Breeders' Association and party, at the ranch home of Tommy Hughes recently. Situated in the beautiful foothills setting along the Highwood River, with the weatherman on his best behavior, it was a day not soon forgotten by those who participated. Large numbers of neighbors and friends from town and country joined in the feast.

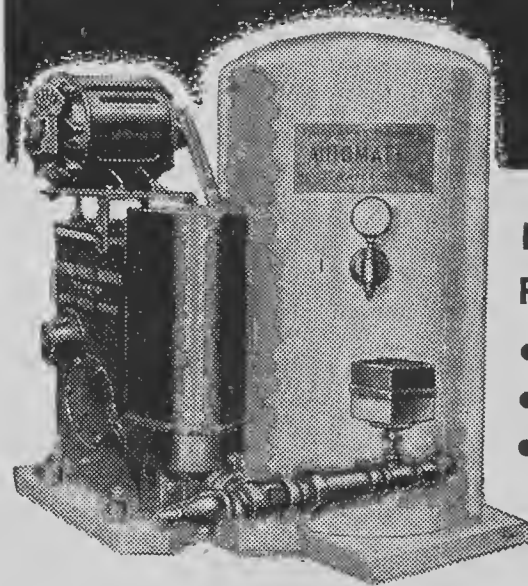
Four hundred and fifty pounds of the choicest beef cut up into 20-pound roasts went into the pit about 10 hours before the guests were due to arrive, and came out so delicious that it soon disappeared before such hungry appetites. All those so fortunate as to attend are still smacking their lips and looking forward to next year. Doughnuts, pie and coffee in huge quantities were served up to finish off the delicious meal, which was a great credit to its hosts and the district.—*High River, Alberta.*

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GREEN GRASS OF WYOMING

Continued from page 11

Just as they were about to touch heads, Ishmael swerved, reared, wheeled; and, as Thunderhead faced about and lashed with his heels, the young stallion fled away. Even as Thunderhead, when a yearling, had fled from the Albino, now Ishmael fled from Thunderhead. Not yet could he engage such a warrior. Thunderhead pursued him. The two horses flew over the plains on wings. Was Ishmael the faster? Or was Thunderhead half-hearted in pursuit? The distance between them grew wider; at last Thunderhead turned in a short circle, abandoned the pursuit, headed for Hagar who was nibbling at the grass as if she had never had such a thought as an elopement in her head. Reaching her, Thunderhead gave her a few mean chops which put her into a gallop, then he forgave her and raced by her side.

At last the mares began to shed their winter coats and drop their foals.

To make sweet, nourishing milk, high in protein content, they needed grass—fresh, young grass, green and luscious and tender and new. They needed an abundance of it.

It showed first as a soft tint on the southern slopes, then deepened until it was like emerald velvet. It covered the world.

The history of the state of Wyoming is the history of its grass. First the buffaloes had it and the Indians and the wild mustangs.

Before Wyoming was a state there had come to it large numbers of English and Scottish younger sons to make their fortunes. And they made not only fortunes but a most picturesque period of history.

THERE were hunts, with the coyote and timber wolf taking the place of the red fox. There were gathering places in Cheyenne, the famous Stockman's Club, the Normandy and the Cosmopolitan, where fine old British names were spoken across the bars. There were handsome homes on the great ranches and much visiting back and forth in huge coaches drawn by four or six horses. There was afternoon tea drunk out of the beautiful old china, there were heavy English puddings on the dinner tables. At Yuletide, clear, sweet English tenors sang the Carols; sang as often as not, on horseback. And from that custom, to this day, the cowboy Carol singers ride out on Christmas Eve, breaking the silence of the frozen plains between ranch and ranch with the joyful ringing of the hoofs of their galloping horses; and, arriving at some sprawling huddle of dark walls and snow-laden roofs, announce in "close harmony" that, Hark! the herald angels are singing, and that, Oh, little town of Bethlehem, the hopes and fears of all the years are met in thee tonight.

There were no fences in those days, no national parks. The range was for those who ran their thundering herds of beef upon it. Red Hereford cattle, with their distinguishing mark of the white face, were imported from England and became the standard beef cattle of the United States.

When sheep were introduced, there was enmity between those who ran beef and those who ran sheep. The cattle were there first. The sheep nosed in. "Firemouths," they were called, from the way they nibbled the range close. In spite of many and bloody conflicts between beef owners and sheep owners the sheep were there to stay. It was finally understood that they did not spoil the range for beef, they ate a dif-

ferent grass. They liked sage and gamma grass, not the native hay or buffalo grass which was the preferred feed for beef cattle.

Eventually there came to Wyoming the dry farmer with ploughs and fences.

For a few years these dry farms existed as a camel lives off its hump, feeding on the accumulations of moisture that the green grass roots had preserved in the soil.

But the plough cut and divided the sod, turning the roots up to the sun. The usual periodical droughts were more severe. Dry winds swept the plateau country and there was nothing to resist them. Moisture went out of the soil, springs and streams vanished, rivers became trickles. The range dried up and blew away.

The dry farmers starved. They packed their families and beds and stoves and pots and pans and mattresses in and on the tops and sides of their rusty, ramshackle Fords, and fled from the murder they had committed, joining the processions of dustbowl refugees that rattled along the highways of the country.

The whole story was told by the gaping, windowless walls, the sagging roofs, the banging shutters of the abandoned farms. Weather beat them into insensi-

enrich it as they feed. Let it be grass again!

And now, when spring comes in Wyoming, the children in school ask each other, "Have you got green grass yet? We have!" And there are jubilant answers, "We have! We have, too."

It is an event. Newspapers publish it. The whole tempo of life and business throughout the state changes. Now the mortgage can be lifted or a new one procured. Grandmother gets out of bed. Children get well of their winter ailments. Old quarrels are forgotten and forgiven, new ones start.

ON the range, every living thing, small and large, knows that the world is new again. Clouds of bluebirds swing over the land, migrating to their northern summer homes. Rabbits and ermine change their winter coats of white to fawn and amber. The little lambs frolic in clusters and make abrupt jackknife dives into the air. The fleet wild mares of the plains gallop with loose jointed, gangling foals beside them. The slow-moving Hereford cows drop their chunky white-faced calves on the spongy turf and lick them dry. All the world is filled with faint innocent bleatings and cries and moos and whinnys



"But that was last year I said you could bring your pet to school, Johnny!"

bility. They yielded themselves to the tumbleweeds and the tin cans.

The general calamity threatened to engulf the stockman as well as the farmer. Hundreds of thousands of cattle were slaughtered to leave more of the dried grass for the few that could survive. But, thanks to the foresight of the federal and state governments and certain public-spirited citizens in reserving almost one-third of the state of Wyoming for national forests, the watersheds of the United States were protected from the ignorance and rapacity of man. There was still grass in the mountains. And the surviving herds were trailed higher and higher, following the receding snows.

The lakes, mountains, snow-covered peaks, dense forests of the national reserves saved the remnants of the herds. The eternal threat and seduction of the desert, which had almost had its way with the grasslands, could not creep beyond the foothills.

The lesson was learned. Grass! Oh, for grass again! A country halfway between tillable farm land and desert is cattle land. Heal the ugly scars by planting grass seed on the ploughed fields. Coax the prairie to put an end to the dust storms by creeping back over the gaping earth and laying over it a luscious cover of greensward. Give it to the cattle and sheep and horses who

the like of which has not been heard for a year on the plains or in the mountains.

The grass thickens and lengthens until it is a lush green lawn of unbelievably vivid color as far as the eye can see. There are patches of pink and blue and lavender made by the forget-me-nots, mariposa lilies, bluebells, larkspur, delphinium. Over all, the heavens deepen into cobalt and are cupped like a bowl. The big, sculptured, white ships of the sky take shape far off in unseen caves, come drifting up from the western horizon, sail slowly across and slide down the eastern slopes. The heavens are patterned with them from north to south and east to west, and the soft wind blowing steadily, but sweet-tempered now and smiling, keeps them ever a-moving.

The clouds cast their shadows upon the prairies, mysterious pools of amethyst color. They wander, they drift slowly eastward, their shapes are distinct and clean-cut upon the grass but constantly changing. Two cows are grazing side by side, two red Hereford cows, one inside the edge of the shadow, one outside. The one within is dark and cool looking, the one outside is brilliant and bright, its hide flashing with glints of fiery color.

There is a windmill upon the horizon, squat brown shape, with sturdy arms

that wave and posture against the sky. There is nectar in the cool, steady wind—nectar of sage from the hillside of wildflowers from the gulches, of snow from the mountains, and of miles upon miles of young greengrass.

The great mountain ranges, the Neversummer Range in the southwest, the Snowy Range in the west, the Buckhorn Range in the south, are still snow covered; the peaks, rearing up, are still as dazzling white as the clouds they touch noses with, but the snow line is higher. Here and there a bare, brown ridge runs clear to the top. They are far away, ringing the world.

Thunderhead often stood with his nose up, his ears pricked, looking at those far mountain peaks, aware of all the life that moved, openly or hidden, between himself and them. He wanted more mares. For a young and kingly stallion his band was short. Occasionally he made a foray and captured another, and once again men began to talk of him and look for him and to pass the word if anyone caught a glimpse of him.

And so the news came to the Goose Bar that the stallion was somewhere near the border of Wyoming and Colorado. Rob McLaughlin sent Buck Daly out scouting, and a week later wrote Beaver Greenway that Buck had picked up the trail in Fox Park and was following it south.

It was Saturday, the twelfth of June.

Ken McLaughlin was out on the Saddle, Back filling his eyes and nostrils and his lungs and his heart with sky and plains and wind and grass.

On the peak of a ridge they stood in silent companionship, the tall, thin, seventeen-year-old boy and his mare, Flicka. He had dismounted and was leaning against her. So had they been standing for the last fifteen minutes.

They were just looking around.

The look reached to the rampart of snow-covered mountains across the state border fifty miles south; and to the gilded dome of the State Capitol building, thirty miles east and two thousand feet down; and to the long, level, sun-blinded plains to the west, pathway of the prevailing winds.

All this he had seen since he had been born, every summer when he came home from school, and in the winter vacations. Never did he come back to the ranch after the long winter's schooling without going through a strange state of consciousness, blissful but dislocated, unable to find his place.

The young do not know that this sense of strangeness is a universal feeling. It wears off. They think, almost with despair, that they have come to the end and their misery will be forever.

Flicka turned her head and pricked her ears.

Ken heard the faraway thunder of hoofs and looked alertly in every direction, until Flicka's head, pointing at a bare ridge several miles south, gave him the cue. Concentrating on it, he saw the little specks, like ants, running along the crest. Just a bunch of wild bronses. He would not have seen them, but for Flicka. He realized, this morning, he had not really been looking.

As a small boy Ken had been an addict to daydreaming, one of those children who, when they are preoccupied with their thoughts, can walk through their days seeing nothing, knowing nothing of what is going on. In fact, the filly, Flicka, had been given to him in the hope that her reality would overcome his love of the unreal. And it had. Ken could be wide awake enough now when he wanted to, but he could still dream.

Today he had just been dreaming. There were two ways you could look at things. One way, you really saw nothing at all, because you looked at it as one whole thing and just drifted away into it and forgot everything. The other way you took it apart and looked at every-

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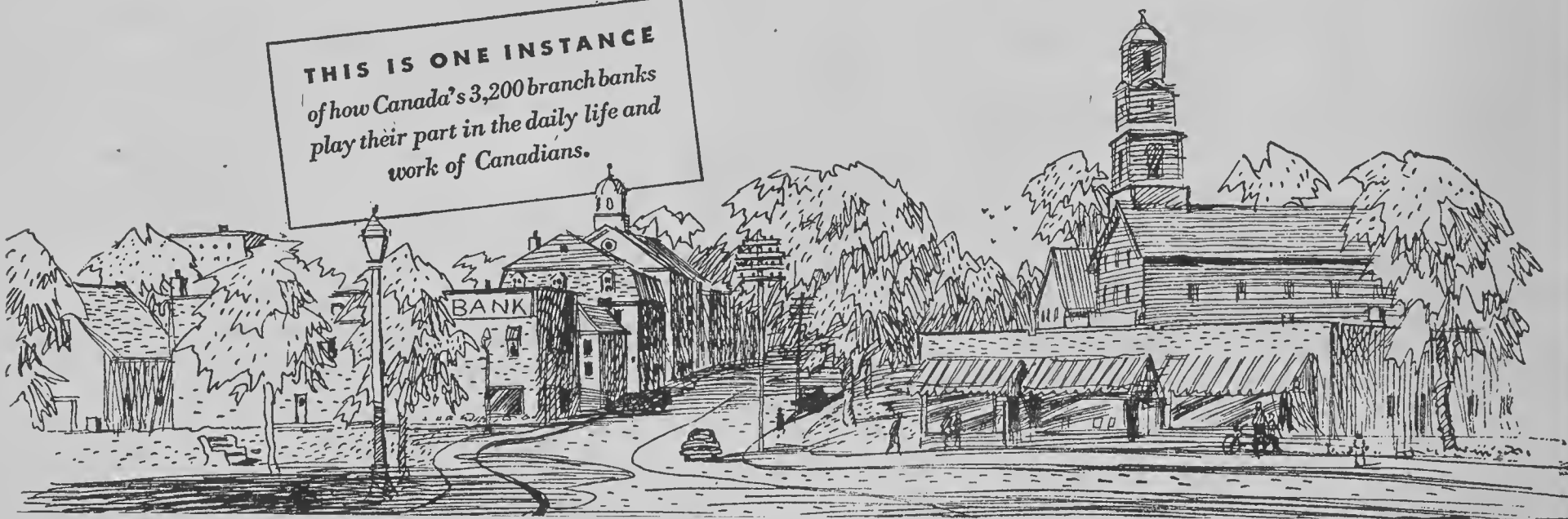
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thing separately and then it came to life.

NOW he looked around and took it apart. The stones turn into squat grey bunnies, almost under foot. Those nubby points on top of rocks were whistling pigs standing on their hind legs and looking searchingly out of little, old men's faces. Those big tufts on the wild currant bush were two hawks watching for gophers. The twist on the top of the trunk of the big pine was an eagle. All this was familiar. All this was home.

In his looking and searching, there was also the wonder of what was not yet to be seen but might show up at any moment.

The sheep, for instance. There was not a sign of them. His father had given him a message to deliver to Jeremy, the shepherd, camping near Section Twenty-seven water hole.

Ken searched the hill above the water hole some miles to the east, but it was bare of life. His eyes wandered away again, losing their focus, falling back into their dreamy contemplation.

A sound from overhead aroused him, the steady, distant drone of an airplane. He searched the deep skies. They were partly obscured by processions of clouds on their slow way across the zenith. He found no plane, only a hawk that wheeled with a harsh, sad cry, and the lovely iridescent broken-off piece of a rainbow, hanging inexplicably in clear blue. Left behind, he thought, from the last storm.

He counted the colors. Pink and mauve and gold and green.

Then an exciting smell made him turn. It was the metallic smell of rain and of dust on the wind. Down southeast a storm was boiling up. The tangle of blue-black thunderheads seemed on a level with him. Lightning split the blackness again and again, and he could see the clouds colliding and wrestling with each other, and curtains of rain falling.

It was not coming toward him. Up here in the sun, with the gentle breeze and the drifting clouds and the hanging ribbon of rainbow, it was a perfect summer afternoon.

He must not forget his errand. Again he turned his eyes to the barren hill above the water hole and in spite of its apparent emptiness he kept on looking. There were two small black bushes on the hillside near the top. Suddenly they moved. One made a dash. They were sheep dogs. Then it looked as if a wave of grey water washed over the hill and rippled down. The sheep. Three thousand of them. The whole band.

He mounted Flicka and rode slowly toward the water hole.

Jeremy, hungry, as all shepherders are, for a breath of the outside world, was standing out in front of his wagon, eagerly awaiting his visitor.

Greetings were exchanged as Ken dismounted and threw his reins over Flicka's head. Jeremy's eyes went to the saddle upon which several packages were fastened.

"Did ye bring me any magazines, Ken?"

"Sure. And some candy and a couple of records." Ken took the bundle off Flicka's saddle and handed it to Jeremy. "This one's a Spanish rumba. Hot stuff. This one's a Western."

The herder took the two records in his hands and looked at the writing.

"The Western," said Ken, pointing, "it's about—all this." He swung his arm wide.

"All what?"

"The grass. The greengrass. See the title? *Green Grass of Wyoming.*"

Jeremy read the title slowly aloud and stood thoughtfully looking at it while Ken, stretching himself, gazed around with his far, dreaming gaze.

"You can keep it if you like," said Ken as Jeremy shut off the phonograph

and came to stand beside him. "You can give it back to me when you come down for the shearing."

"There's gonna be a good clip," said Jeremy seating himself on one of the steps of his wagon and taking out his pipe. "Any news down at your place?"

Ken threw himself full length on the grass. "Well, I came up to tell you," said he, "that Dad's got Garcia and his men for the shearing. It'll be about in two weeks. He wants you to keep the sheep where they are until then if there's feed enough."

Jeremy took a deep pull at his pipe. "There's plenty grass' here yet—the lambs are lookin' fine. Your brother home too?"

"Sure. Say—did you know Howard passed his exams and is ordered to report at West Point the Fourth of July?"

"That ain't no news! He took them exams last January. He got the notice he had passed in April, the wire to your Dad came through the telegraph agent over to Tie Siding, an' he spread the news—I bet I had it afore your Dad did. And I kin tell you somepin' else too. Your Dad went into Cheyenne and painted the town red. Waal, he ended up at the Post, and the Army officers give him a dinner of congratulation, and they did say your Dad got tight as a tick. But, say! Who'd blame him? Sixteen thousand dollars! That ain't a minnow—that's a good big wad of dough."

"Sixteen thousand dollars?" said Ken. "What you givin' me?"

"Sure. That's what it takes to put a boy through West Point. When Howard passed them exams he put sixteen thousand dollars in your Dad's pocket, or words to that effect. Say, Ken, any other news down at your place?"

Ken thought hard, then shook his head.

"Your baby sister baptized yet?"

"Nope. That's comin' off soon, though. Howard and I are going to be godfathers."

"I heerd yore Maw was set to have it done last summer an' yore Paw didn't git around to feelin' ready for it and yore Maw was real mad. That so, Ken?"

Ken looked a little worried. "Something like that," he said.

"Any other news, Ken?"

Ken shook his head.

"What about that Pearl woman?"

THERE was always news about Pearl.

Ken told how she had gone to town for her day off and had disappeared. His father had found her in jail as usual. Told the Sheriff to leave her there for two days more, till she was good and sober, then he'd come for her.

"And I bet," chuckled Jeremy, "the Sheriff was glad to oblige. Ef yore Maw and Paw didn't keep her here on the ranch the state would have her board and keep to pay at the House of Correction."

"Sure," said Ken. "That's the luck of it for us. Zowie! the pies and cookies she makes!"

"Fond of cookies myself," said Jeremy smacking his lips. "Did she sober up all right?"

"Sure. They took her out of jail and put her in Dad's car and he brought her right to the ranch."

Jeremy chuckled. "Didn't give her no chance to cut loose again. Say! I wonder how many times your Dad's done that!"

"Plenty," said Ken. "It's lucky she's home again now because we've got company coming."

"Company?" Jeremy pricked up his ears. Company at any ranch was a good news-item.

"Carey Marsh," said Ken importantly.

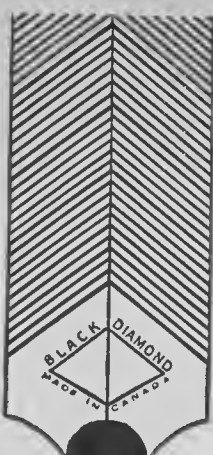
"Say! Ain't that the leetle gal was nearly lost in the blizzard last fall?"

"That's the one."

"Daughter of Beaver Greenway? The fellow owns the race track over to Saginaw Falls?"

"Not daughter, grandniece. Mother

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This ad is addressed to a man not over age 55 who is concerned about his future security and interested in getting a business of his own. He may be too old for heavy work, or again, he may be a young man. Perhaps his income is uncertain or not enough to meet present-day demands. He may be discouraged, but if he has good references and a car, there is a possibility of him qualifying for better than average earnings. He should forward full personal history to the advertiser, Box 193, The Country Guide, Winnipeg.

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Large, economical size, 65c

**MINARD'S
"KING OF PAIN"
LINIMENT**

35¢

wrote and asked her to come down to visit us and she's coming tomorrow."

"And wot about that horse of hers got lost in the Badlands? The English race horse? Milt Norcross was over here yestiddy asking me was you going out again this summer to hunt her?"

"Sure we are. And this time we'll get her. And my stallion, too. Dad sent Buck Daly out two weeks ago to locate them."

"Locatin' a little band of horses somewhere in Wyoming, Montana, or Colorado is a big order, Kennie."

"But we know about where they are. A lumber outfit over in Fox Park sent word to Dad they'd seen them over there near the North Platte. That's where Thunderhead was a year ago when Howard and I trailed him. It's one of his hangouts."

"If anyone can trail him, it's Buck Daly. As good as an Indian scout any day."

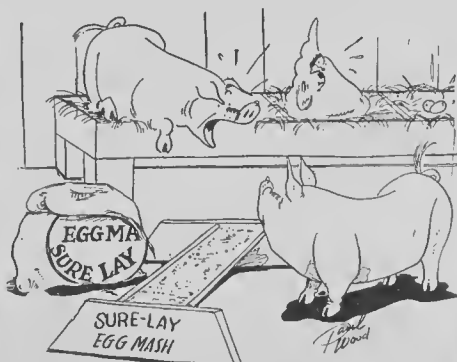
They continued to talk until the light changed. Most of the sheep were drawing nearer to the fold for their evening feed of cotton cake.

Ken slowly got to his feet and stretched again. Jeremy stood up and walked out from the wagon to look at his sheep. A mile away a group was lingering in the valley. Jeremy turned to his dogs. Ken saw both collies had their eyes on their master, waiting for orders. Jeremy pointed toward the sheep and made a gesture with his hand. The two dogs shot down the slope, ran across the fields and curved around the sheep. The sheep, startled, looked up, and with their smooth flowing motion, rippled across the floor of the valley. But there were still some which the dogs had not seen beyond a shoulder of the hill. The two collies, glancing at Jeremy for orders, received this information from a few free gestures of his hand. They investigated behind the hill, rounded up the sheep and brought them to the others. Jeremy waved his arms again, telling the dogs not to hurry the sheep, let them take their time coming in. The dogs lay down, panting, and turned their faces away, and the sheep quieted, grazing slowly as they approached the fold.

Ken looked for the storm, the rainbow, the ridge runners, the airplane—all gone now. And the world had changed because the light was changed. There were long shadows. Every outline was soft and mysterious. The colors were richer. There was a new exciting coolness in the wind.

KEN drew a deep sigh, but it was not of sadness, it was of emotion. Because Carey was coming, because his life trembled on the brink of this exciting event, everything was significant, everything was important.

There drifted to him, from far away, the deep belching roar of the bull. . . . Milking time, and Cricket acting up, as usual. Didn't like to see the men coming to drive the cows in. A good thing they'd put the ring in old Cricket's nose; fastened him with chains out on both sides of his head and down to a big bolt in the floor of the barn. Couldn't move any way but down. And then Gus had opened the big copper ring on its hinge, and driven the two points through the cartilage of the bull's nose. Cricket had squirmed and roared,



"Powerful stuff, aint it?"

IDEAL FOR FARM WORK

B.F. Goodrich APACHE BOOT



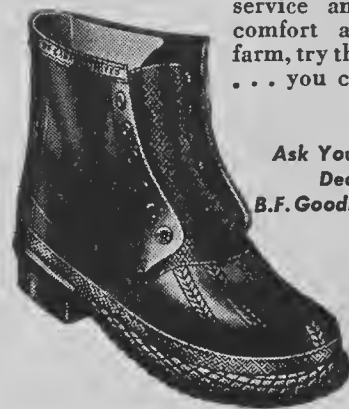
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The APACHE boot is tops for keeping feet snug, dry and comfortable. For long, hard service and foot-easy comfort around the farm, try the APACHE . . . you can't beat it.



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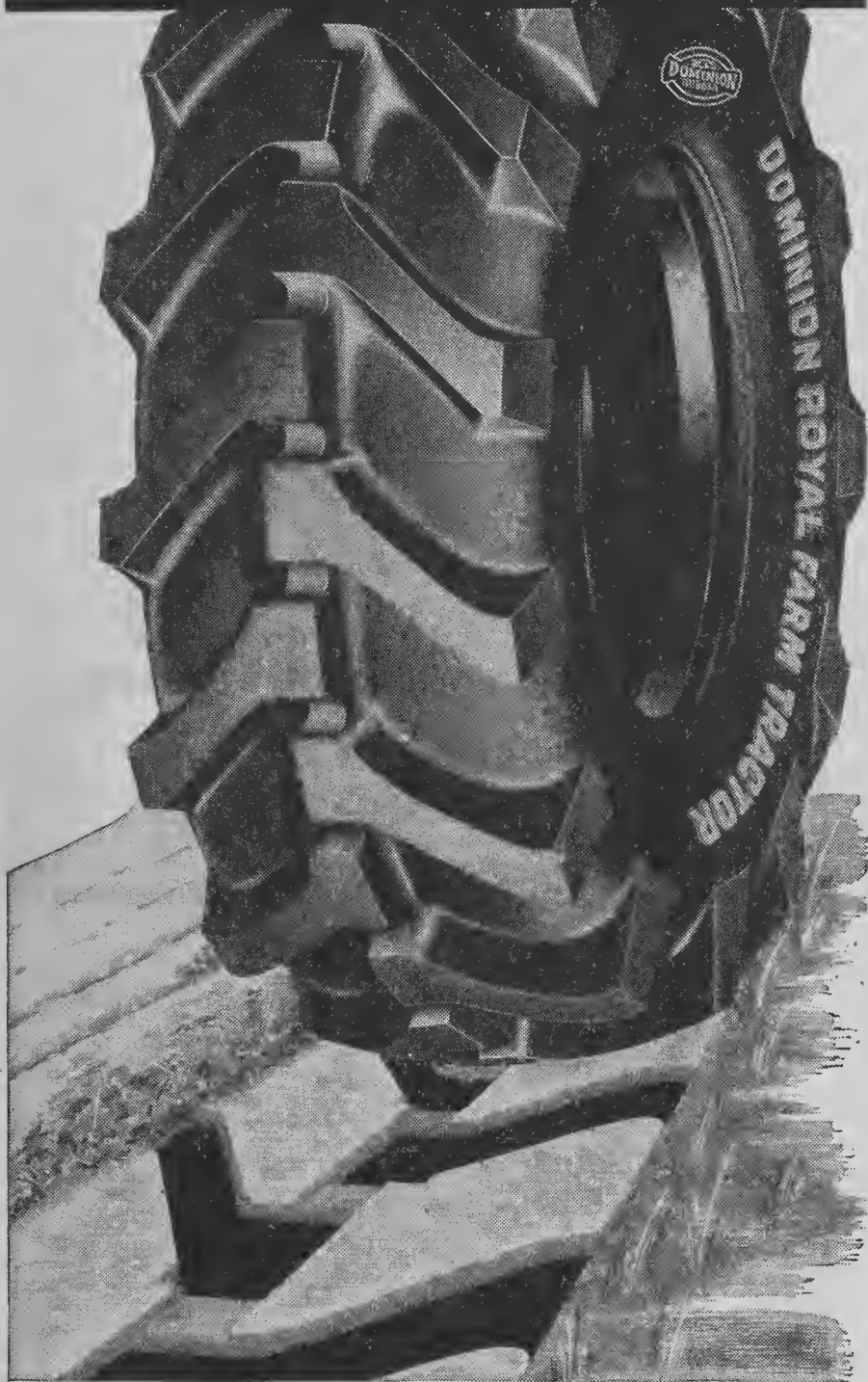
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gone down on his knees and rubbed his nose on the ground. But that hurt! He got up again pretty quick. Gus greased the nose, kept turning the ring in it, then undid the chains and led the bull away, squealing, but as obedient as you please.

That roaring! Just a lot of bluff, now. . . . Ken touched his heel to Flicka's side and turned her down the slope.

Eastward bound Number Twenty-One roared into the Cheyenne station at 6.45 p.m.

The McLaughlins, with the exception of Nell and Penny, were on the platform to meet it; Rob, very conservative-looking, in an English tweed suit, Howard in striped blue flannels and a sport coat, Ken in his best suit of grey French flannel. The two tall, sunburned boys were bareheaded, their dark hair a little rough, their collars open, their blue eyes eager.

The train slowed down and the white-coated porter stepped off and swung luggage down. Carey was the first passenger to be seen.

Ken hadn't dreamed that he was going to feel like this when he saw her. His heart hit him a thump under his throat. He felt that he would choke if he tried to say anything. With one look he took in every detail of her as she came down the steps. There was that grave smile, as of a child being very sure to be correct and remember everything she had been told. It pulled her lips together in the middle and drew them up at the corners. Her dark eyebrows tilting up over her temples made her grey eyes look questioning. A wide-brimmed Breton sailor hat curled back from her face and her heavy, glossy hair fell like a mane to the shoulders of her white linen suit. Yes—there was the child. Ken was glad she hadn't changed. Sometimes, from one year to the next, girls and boys changed so you could hardly know them. He realized vaguely that she was very smart. What was it about the suit? The jacket was short and the blouse, dark blue. There were the same lovely long legs, slim and brown and smooth.

"How's the girl?" cried Rob helping her down and giving her a kiss.

"Hello, Mr. McLaughlin."

"Hello, Carey."

"Hello, Ken; hello, Howard."

"Hello, Carey." They all shook hands. She gave the porter the tip she had ready, the boys grabbed her suitcases and there was the usual scramble of talk which said nothing and made Ken feel both uncomfortable and excited.

Rob McLaughlin took her by the arm and steered her across the platform. "We're going to have dinner at the Plains Hotel."

"Mother didn't come, because she didn't like to leave Penny," said Howard. "She sends her love."

"How is the baby?" Carey addressed this to Ken, looking over her shoulder at him.

"She's okay." He tried to think of something else to say. "Gee, Carey—" It seemed inadequate and ridiculous, but Carey gave him a glance, and it went through him and warmed him. Perhaps she knew all that "Gee, Carey" meant.

The hotel dining-room was crowded. They had a round table in the middle of it. They asked the correct and formal questions of each other at first, little by little gathering up the threads of each other's lives and beginning to feel at ease again. Then Carey wanted to know if they had had any news of Buck Daly? Had he located Thunderhead and his band of mares? Had he seen Jewel?

Rob explained that he was in Fox Park trailing them, had not yet seen them, but might at any time, and asked, "What races are you going to put her in, Carey, when you get her back?"

"First, the American Grand National at Belmont Park, in November," said Carey calmly, and Ken gasped.

Rob laughed. "Two-and-a-half-mile

steeplechase! That'll be some going for a youngster."

"That is," said Carey, "if she's in condition. We don't know if she's been hurt. She mightn't be able to run."

"You don't need to worry about that," said Rob. "She's been in charge of a range stallion, remember, and she's on Wyoming greengrass."

"Wyoming greengrass," murmured Carey, feeling the lilt of the words. "It sounds like something magic."

"It is, believe me!" said Rob. "This country up here does something for horses that is out of this world. Gives them strong lungs, staying power, makes them hard. Jewel will be in better condition than she has ever been in before."

"Oh, it's the green grass!" sang Howard softly.

Ken opened his mouth to say that Jewel, in all likelihood, was about to become a mother. He glanced around, thought better of it and shut his mouth again. Carey was telling Rob of the other races her uncle was thinking of for Jewel. Jewel was to be entered in all the big stakes.

SOME Army officers whom Rob knew came by and stopped to speak. The boys got up and stood. Again, the talk was of Jewel and the expedition which was to be sent out to get her and of the races she would run in. Her fame, and the interest of her story, had gone all over the state. The officers asked who was going out to get her?

"We're all of us going," said Howard.

Colonel Harris looked at him. "This is the Cadet, isn't it?"

Howard grinned and nodded. "Yes, sir. My last vacation here for two years."

Colonel Harris shook him warmly by the hand. "Welcome to our midst, Howard. Rob, couldn't you find a better fate to wish on him?"

Rob went over to their table for a few minutes and now the boys talked more freely. They wanted to know about last fall, after the blizzard, when Carey had left the ranch with her Grandma and uncle. Had she got an awful bawling out from her Grandma for having gone with Ken in the pick-up to the Monument?

Carey shook her head. Her face was contrite. "Oh, it wasn't like that, it was just that it made Grandma ill, she was so worried about me. I shouldn't have done it."

"Is she coming down here with your uncle when we go out after the horses?"

"Of course," said Carey, "your mother has asked her."

The boys looked at each other. Ken said, "But this summer, won't you go along with us?"

Carey looked doubtful. "I don't think Grandma would ever let me do that. There won't be any other woman along."

"But Dad is going this time! And your uncle!"

"Look what happened to me last fall. She'll never get over that."

"But that was because of bad weather. Now it's summertime. It'll just be like going off on a summer horseback trip with a lot of fun and excitement thrown in."

Carey heaved a deep sigh. "Oh, I wish I could! I'd give anything to!"

Howard said firmly, "There isn't a reason in the world why you should not go. Any other girl would—any other girl's mother would let her. You ought to show a little spunk. If your uncle says you can go, then just take a stand!"

"But it might make her ill!"

The two boys looked at each other. What would you do if someone got sick every time you did anything that was fun?

"Cripes, Carey!" said Howard, "You have got a problem child on your hands. I don't see how you can take it!"

Carey's wide grey eyes took on a worried expression. "Well, but Howard," she said, "you obey your father—and your mother too!"

"But they're reasonable!" exclaimed Howard. "Your grandmother treats you as if you were a little girl."

Ken said persuasively, "Mother says that everyone in the world has a special problem to solve. I guess she's yours. I don't think you ought to knuckle under when there's no sense in the things she makes you do."

"But she's not well," Carey staunchly defended her.

"I think she just puts half of that on to make you do what she wants!"

Carey looked doubtful. "That's what Uncle Beaver thinks. At least, sometimes he does. He says I ought to assert myself. I *would* like to go to college."

"However did you get to come down and visit us?" asked Ken.

Carey laughed. "Well, it was just luck. You see, when your father wrote to Uncle Beaver to tell him he had sent Buck Daly out to locate the horses, he said at the end of the letter that your mother was writing inviting me down right away for a visit. And that same day my Grandma received the letter from your mother, inviting me. Grandma was writing to say I couldn't go until they all went. But Uncle Beaver wired your mother and said I could come, and then told Grandma what he had done. So there wasn't any use in her finishing her letter."

The boys laughed loudly. Howard seemed to have a morbid interest in the strange psychology of Mrs. Palmer. "Was she mad?" he asked hopefully.

But Carey would give him no satisfaction. "She didn't like it very well," she said in a reserved manner.

"Gee! I'm glad you came," said Ken. "So'm I." Carey's eyes were on her plate.

"We'll have a lot of fun!" said Howard.

"I want to do everything different from what I do at home," said Carey. "I don't want to be wrapped up in cotton wool. I want to wear pants and groom my own horse. And bathe Penny. And cook and make dumplings and doughnuts and strudels, and have a pair of pliers in my pocket and everything."

"Howard and I are training four spring colts," said Ken. "You can help us do that."

THE boys explained how this was done.

Carey listened, her eyes shining, feeling as she had last year, that she was being taken into a new world.

Rob returned, they finished their dinner, and got into the Studebaker. Rob stopped at the Creamery for some ice cream to take home to Nell.

On the drive home, Carey sat behind, between the two boys, and asked them why the officers had called Howard "the Cadet." They explained. Carey looked at Howard almost with reverence, then gravely shook his hand and said, "Congratulations, Cadet McLaughlin."

Ken writhed inwardly. Was it going to be like this? Would Howard be the one she looked at and admired? It was tough having your girl see you always with your elder brother who was handsome and full of teasing talk and funny ideas and would soon have a West Point uniform on.

"He's got a girl," Ken blurted out.

"Oh, has he?"

"Hey! What are you giving us!" exclaimed Howard.

"Yes, he has, her name's Barbara Bingham and he's got her picture in a case in his pocket and a big one in his room and he gets two or three airmail letters from her every week."

Ken got all the evidence out before he could be interrupted. But Howard was nonchalant. He winked at Carey and said, "So what?"

Carey kept looking at him smilingly and wonderingly. Ken leaned back in the corner and sat silent and glum.

At the ranch, Nell took the girl into her arms and gave her a warm embrace. Carey had fallen in love with Nell the summer before. To be taken in her arms now and hugged and then kissed on both cheeks, with Nell's tender, dark blue eyes smiling a welcome, almost made a lump come into her throat. This was the way mothers were. She felt her own loss as if it had just happened. She could have put her head down on Nell's breast and cried because she had no mother and had never known one. Just think what these boys had!

"Come out to the terrace," called Nell, "when you have put your things away."

"And we'll have some ice cream," added Rob.

Nell sat there with Rob, while Howard and Ken carried the suitcases in for Carey, lit the light, opened the closet doors, and then left her.

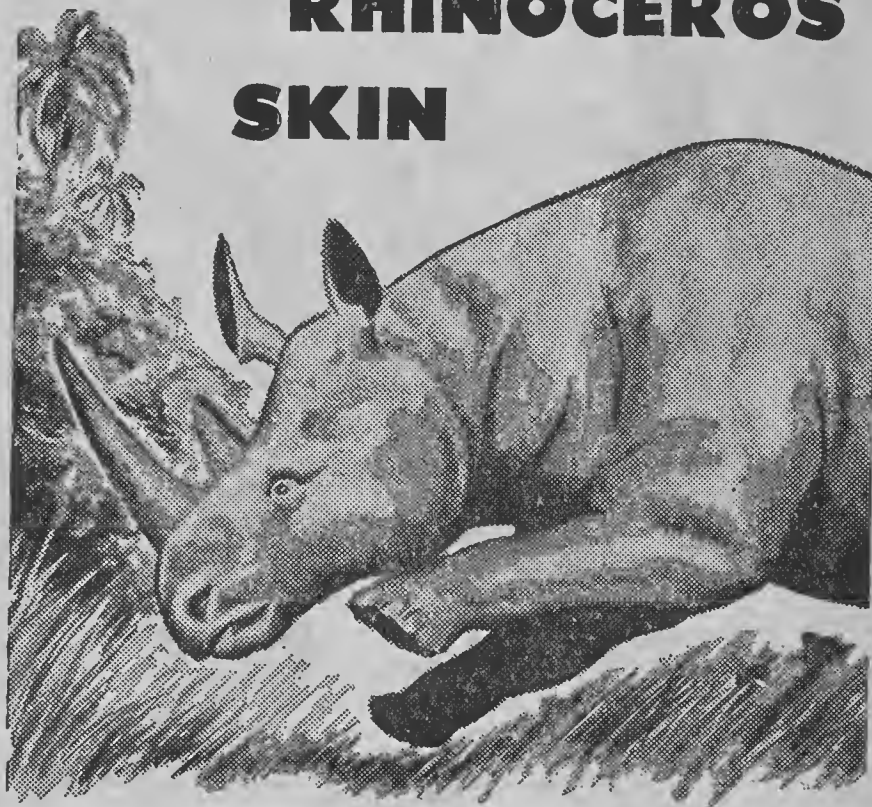
It was the same bedroom in which Carey had slept with her grandmother the year before. Carey stood in the middle of the room sniffing. The room had a smell. Every room has its own smell. This seemed to be of wood and something spicy that hung around the big mahogany bureau, and a wonderful freshness and sweetness that came in the open windows. Associated with it were thrills, excitement, fun. It was definitely a smell of happiness.

Carey looked out. There was still a soft twilight. She could see the undulations of the plains, the point of a timbered hill running down to the road across the stream, the mountains so far away, the bluish misty color of the sky above the horizon, three faint new stars.

A soft wind blew in the window, billowing the curtains, the same chintz curtains with tiny bucking broncos printed on them that had been there last year.

"**H**E'S simply nuts about her," said Howard at the end of breakfast, as

TOUGH AS RHINOCEROS SKIN



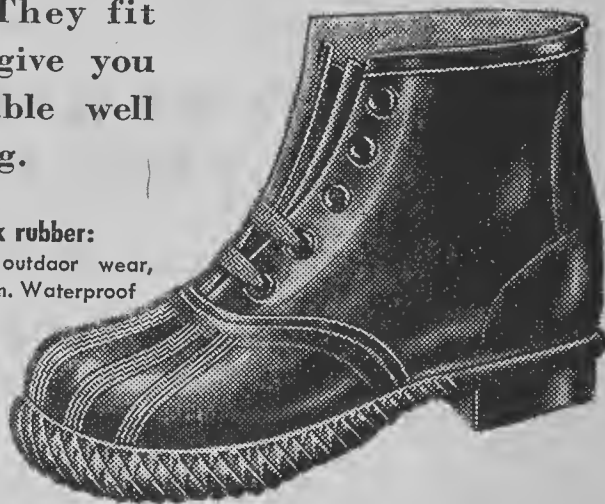
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Carey and Ken left the room together on their way to the stables.

"Ken, you must remember, has a one-track mind," said Ken's father. "He's a lad of one idea. He takes hold and he can't let go." Rob pushed his plate away and gave his undivided attention to Penny who sat on the table just to the right of his water glass, her customary position at breakfast. He took hold of her tiny waist, his big hand almost ringing it, and squeezed a little. Penny chortled and grabbed his fingers. "It's all right with me if he is," said Nell.

Rob said dryly, "Judging by the way he is crazy about horses, it would be quite something to see! Ken crazy about a girl!"

Nell said, "That's just it! It's time he knew there was something in life to fall in love with and dream about besides horses."

"Have a heart, Mum!" cried Howard. "You know Ken! If he really falls for a girl, he'll be all the way loco, not just halfway."

"Ken is possessive," said Rob, "far too possessive."

Nell glanced at him thoughtfully as she refilled her cup with coffee and placed one elbow on the table.

Howard looked from one of his parents to the other. "Possessive? How do you mean?"

"Whatever he loves or wants," explained Rob, "has to belong to him completely and exclusively."

"That's right!" exclaimed Howard. "Do you remember how he was about Flicka?"

Nell remembered. When she had asked Ken why, when he could ride any horse on the ranch, he was so set on his father's giving him a colt, he had answered, "Oh, Mother, it isn't just the riding. I want a colt to be mine—all my own."

She said aloud, "And do you remember how he was about the canaries?"

"The canaries?"

"Perhaps that's too long ago for you to remember, Howard."

But Rob began to laugh. "Ken and his 'freemale'!" he said.

Nell explained. "It was the canary year. At the little school you both went to, they were raising canaries, so then all the children wanted to raise canaries at home. You were seven and Ken was five. Ken heard all the talk about males and females and began to beg, 'But I want a little freemale—couldn't I have a little freemale all of my own?'"

They laughed. Howard said, "I bet he got his little freemale."

"He did," said Nell. "We raised canaries. *Did* we raise canaries! They were all over the house."

"And then he wanted another little freemale, Flicka."

PEARL came in and started to remove the dishes. Rob got to his feet, and lifted Penny in his arms. She seized his nose and squeezed it as hard as she could. "Ouch!" he said, ducking his head against her. She gurgled and grabbed a fistful of hair.

"Hey! Just a minute," yelled Rob, and the baby burst into one of her hearty laughs, so infectious everyone had to laugh with her. "You're going to wreck me!"

He carried her to Nell who took her on her lap.

As Rob and Howard left the room, Howard turned at the door to look back with a grin. "First the canary, then the filly, and now another little freemale!"

Nell laughed and when they had gone, sat stirring the sugar into her coffee, thinking. . . . For all that they say about possession and possessiveness, who is there that isn't? Who that loves, really loves, would be willing to share? If they were willing, it would mean that they were lukewarm and indifferent. The possessive ones are the ardent ones, the all-out ones; the ones who can give themselves wholly, utter-

ly. Possessiveness is the sweetest part of love, and it's *all* of sex! All the same—her face became grave as she remembered how deeply Ken, the ardent, the possessive, had suffered, and would suffer again.

Her thoughts ran ahead to the future. She thought of Carey as Ken's wife, as her own daughter. Of course it would be years yet, but so often the love of young people is intense, wholehearted, pure, deep and lasting. Many a man marries his first love.

Nell had turned over Redwing for Carey's use. This time Carey was equipped with her own riding clothes. They were all unpacked, and hung neatly with her other things in the pine-scented closets of her room, with her boots and shoes in a row underneath. In the mornings, with riding and stable work ahead of her, she wore blue-jeans and a cotton shirt. In the evenings she would put on one of her ruffled summer dresses and win an approving smile from Rob.

Carey was not only happier than she had ever been in her life, but she knew it. Every day was packed with interest and fun, the more precious because, when her grandmother arrived, the fun would be over—unless she screwed up her courage—as Howard was always urging her to do—and took a *stand!* and insisted on being allowed to go on the expedition with the others. If she didn't—her mind envisioned the departure of the expedition—on horseback or in cars; the boys riding away; herself left behind with her grandmother and Nell; and the baby—and Pearl—a lot of women.

So she made the most of this interlude of freedom and did the things she had always longed to do. She helped Nell give Penny her bath and dress her. She put on a big apron and, under Pearl's direction, made an excellent batch of doughnuts. She made acquaintance with all the animals and learned their histories.

The boys were training four colts. Carey helped them. They spent the morning doing this, halter-breaking the foals, teaching them to lead, to obey orders, to eat oats out of the hand.

Then, at noon, they would go into the swimming pool which was really a reservoir for the irrigation ditches. Carey loved this. To float on her back staring up at the deep blue sky, watching the clouds moving so slowly across the heavens, the hills going up around her so that she seemed to be at the bottom of a cup; and she would muse about these new friends and all the things she was doing here. Nell—what was the matter with Nell? You never seemed quite to get at her, as if she was shut up in herself with some secret.

Carey's reverie was broken by a vigorous splashing as the boys tore past her—just showing off.

They rode their horses down to the pool, bareback, in their bathing suits and rode them back again, soaking wet. More than once they put the horses into the pool and made them swim, too. They took long rides over the plains, or to do errands for Rob, or to inspect the fences. They gossiped with the men and heard of all that was going on in the country.

THE evenings were long and light. It seemed as if, in the gentle twilight hours, the fruit of the day was gathered up and eaten. Sometimes Nell and Carey played duets. Sometimes they all sat on the terrace and talked while the animals hung around, turning their curious and affectionate eyes upon the different members of the family.

On one such evening Ken suggested to Carey that they walk down the meadows to Castle Rock.

Carey glanced around. She was sitting on the steps of the terrace, watching the puppies playing.

Nell was indoors at the piano. Rob

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was near by, occupied with Penny, a highball on the table beside him. He had drawn the baby between his knees, her tiny hands were busy with the buckle of his belt and there came from her lips a stream of talk without intelligible words but of so pure and birdlike a tone, so innocent, so mindless, that Carey wondered at the sweetness of it.

"How about it, Carey?"

Carey had heard about Castle Rock. The boys had told her of the finding of the carcass of Rocket's foal there, half-devoured by the wildcat and of all the other skeletons and grisly remains in the caves under the rock. She would like to see it. And an evening walk alone with Ken through the meadows—the thought slightly quickened her pulse. Still, there was a deliciousness about this family group on the terrace after supper and she was reluctant to leave it.

Howard, chinning himself on one of the poles of the pergola, said, "Why don't you take your gun? I'll come along and we'll get some cottontails."

Nell was coming out the door. "Don't shoot any cottontails today. We have more meat on hand than we need. I want to talk to you, Howard."

Nell sat down in the hammock and Ken and Carey started off.

Howard stood looking down at his mother questioningly. Her face was merry as she looked back at him. There was a little teasing grin. She patted the hammock beside her and he fitted himself. "Why," she said, taking hold of his hands which were clasped across her chest, "do you want to cut out Ken with Carey?"

"Wha—a-at?" exclaimed Howard. "Why, Mother!"

"Don't 'Why Mother' me," she said trying to pull out of his arms, but he held her tight. "I'm on to you. But what I really want to ask you about is Barbara Bingham."

All her senses were alert, and clasped against his chest as she was, she could feel the slight reaction of his body to this name—a tension, a waiting.

"Howard, you are so secretive!" she cried. "Why do you make a mystery about this girl?"

"I don't make any mystery." He rubbed his chin on her hair tenderly.

"Yes, you do! All these important-looking letters coming! Airmails! Special deliveries! Although who could specially deliver a letter to us here on the ranch I cannot imagine, unless a coyote or an eagle."

Howard laughed, but even though Nell waited, he volunteered nothing.

"Is she *the* girl, Howard?"

"Well, I guess she is, Mother."

"More than Carey?"

"Carey's just a kid."

"I like Barbara's looks, judging from the pictures of her you have around, but if she is to be my daughter-in-law, I'd like to know it."

Howard made no answer to this, and Nell muttered impatiently, "Oh, you make me tired!" She struggled to free herself, Howard released her, stood up,



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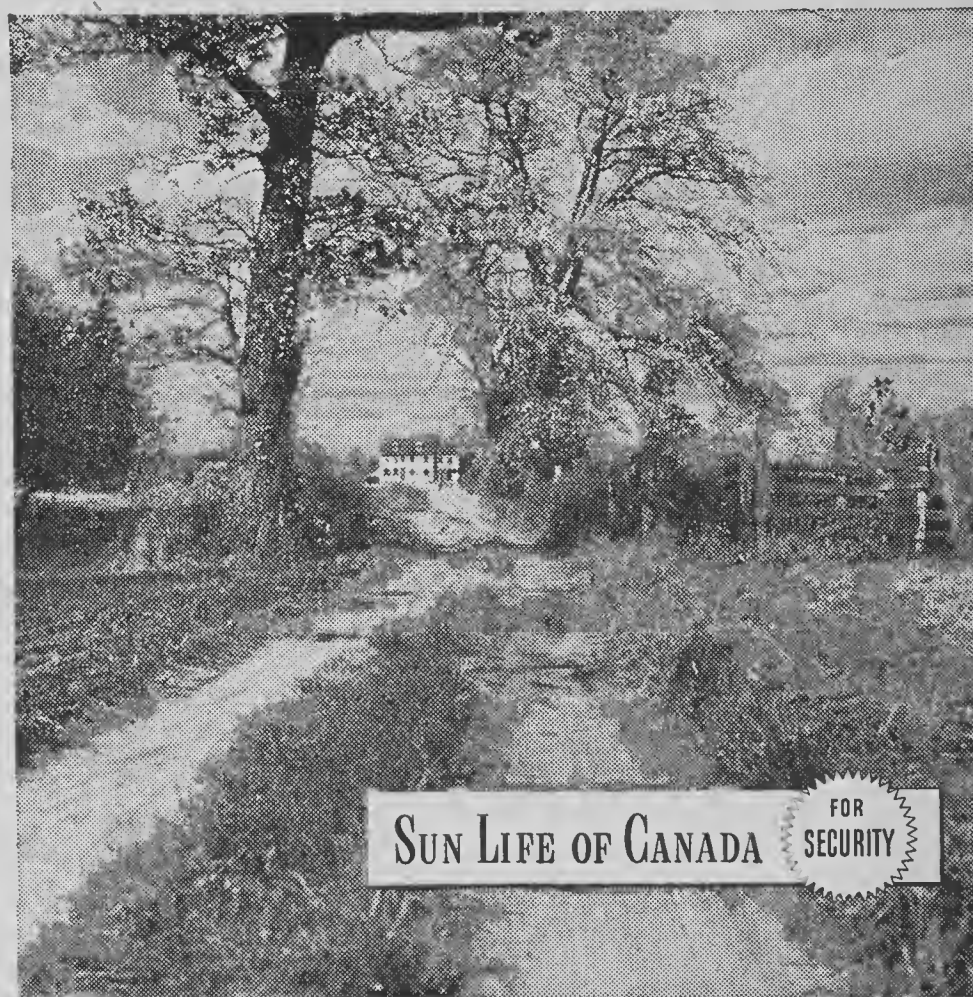
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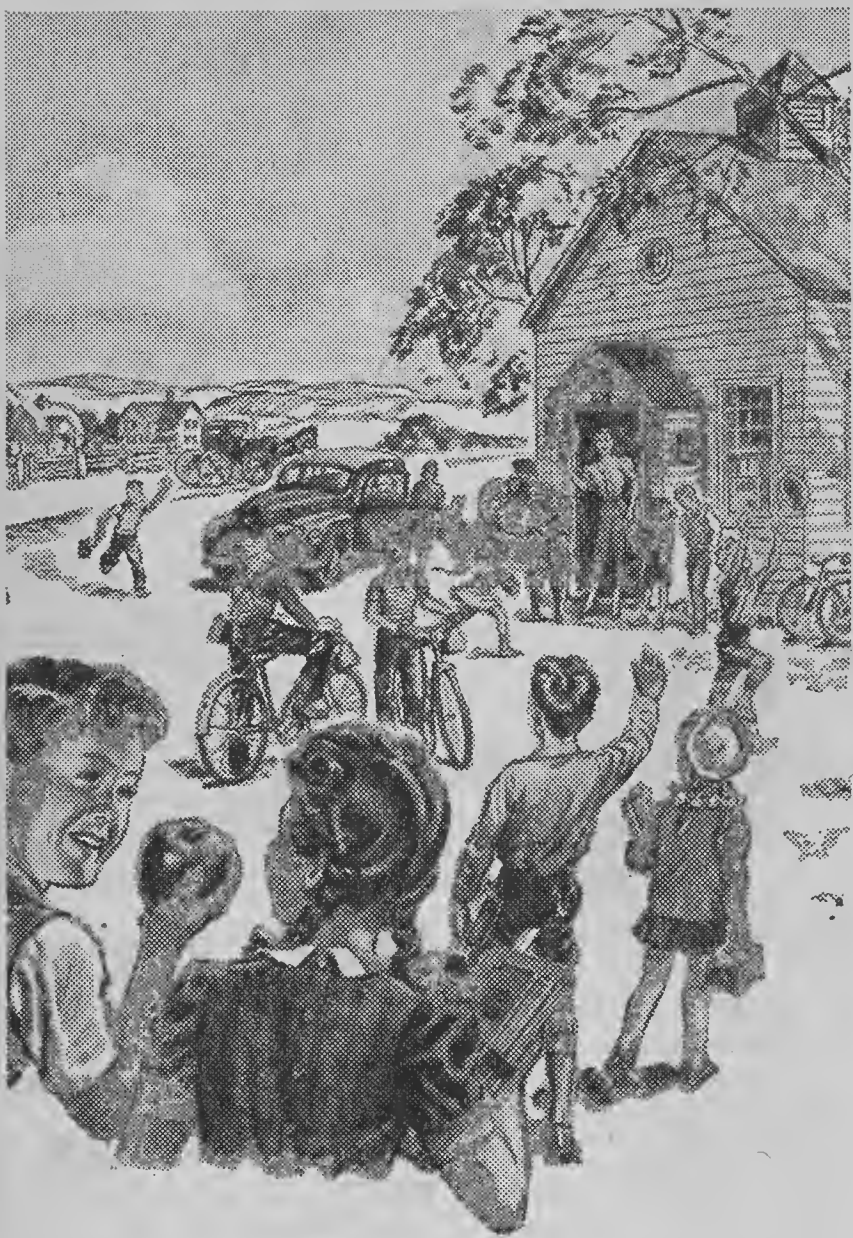


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AUTUMN

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then stooped, gave her a quick kiss and leaped off the terrace. He walked down to the cowbarn. Nell sat, touching her foot to the ground, so that the hammock swung a little.

There came a deep roar from the corral of the cowbarn. Usually, after evening milking and feeding was over, the bull was quiet. Sometimes he went out to pasture with the cows, sometimes, even when the cows had left him, he remained in the corral where he had received his feed, standing there motionless in one of his dark meditations upon the primal joys of blood and lust. He appeared to live in a chronic state of smoldering fury, viewing any person, any moving thing, any life outside himself, as something which it was his duty to put an end to. Even the calves were not safe with him. Only the cows.

"Rob," said Nell, "I wish you'd sell Cricket, or have him butchered."

Rob made no answer. He was absorbed in trying to discover what Penny had, shut up in one small fist. He tried to open the wee fingers. She resisted him and squirmed in his grasp.

"Rob!" said Nell.

"Oh, he's all right," said Rob, "now that I've put the ring in his nose. It's Howard he's yelling at." He raised his voice. "Howard!" he shouted. "Cut that out!"

"I'm not doing anything," Howard shouted back, then wandered up from the cowbarn to the bunkhouse. The men were sitting out-of-doors on the wooden benches which flanked the front door. Here they gossiped the long evenings away, falling into silence when music came from Nell's piano. Howard joined them. Cricket ceased his bel-lows.

While Nell swung gently in the hammock her thoughts wandered. . . . Guests coming before long . . . rooms to get ready . . . long talks with Pearl . . . how was the old lady going to behave . . . Ken . . . Howard . . . Fourth of July. . . .

The long winding hay meadows of the ranch had their names, names which had never been given to them, which had just come to be. The closest to the house was called the Home Meadow. The next was Crooked Meadow, because of the torturous twists and turns of Lone Tree Creek winding through it. The farthest meadow was called Castle Rock because, overhanging the aspen grove at the far end was the great rock, jutting up seventy feet high, as big as a house, constructed in the strangest manner with parapets and turrets and balconies and peaks and minarets and domes, and underneath it the chambers of horror which the boys had described so vividly to Carey.

NOW she stood in one of them, in pitch darkness. Ken was there beside her but she could not see him and he did not make a sound. It was frightening. She made a little murmur of fear and felt Ken's hand reaching out, asking for hers. She gave it to him and he clasped it tight and then, standing so, the fear left her. It became a thrilling experience, and it was hard not to breathe in such a way that Ken would know how she felt. Gradually her eyes became accustomed to the dark and she was able to follow him about from one cavern to the other, inspecting the bones and skeletons, listening to him tell her what each animal had been. But though she looked at them she was really thinking of Ken and wondering why she was always excited when she was alone with him, wondering why, mostly, she chose to go with Howard when she really liked Ken best.

Then they climbed the great rock, Ken helping her in the difficult places, and at last they were up on one of the high platforms at the very top, lifted into the freshness of the evening sky.

Carey skipped about. She put her

head back and lost herself in the soft indigo depths of the heavens. She scanned all the wideness of the plains and the rolling hills. And she chattered to Ken.

They were never tired of discussing the events of last fall. It was like having the adventures all over again. Carey told Ken what she had done at the Monument after he had ridden away with the men. How Cookie had saddled the roan for her and told her to go on and have a ride, and how she had gone and climbed up the little cone-shaped hill, and then, at the very top, had taken out her binoculars and had seen Thunderhead ten miles away or so standing up on the top of a peak like the statue of a horse, looking right back at her.

"You've seen him since I have," said Ken jealously.

"But you'll see him soon now, Ken. You're going to get him back."

"Maybe," said Ken, who was in a despondent mood.

"That's what you want more than anything else in the world, isn't it?"

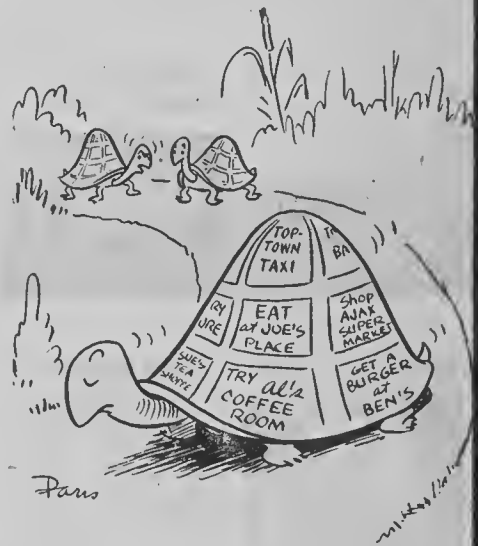
"I don't know."

"You said last summer the thing you wanted more than anything in the world was to get him back and ride him in one more race."

"I know I did."

"Don't you still want to?"

"Yes, but," he turned his face to look at her with a glance half wary, half bold, "but now—what I want most has something to do with you, I think."



— A lazy way of making a living, I claim.

feel as if I would want most in the world to do something for you."

Their eyes met timidly, slid away again. It seemed a huge admission Ken had made and he hastened to cover it up.

"What do you want most? Oh, I know! You want to be a singer."

"No."

"Then a concert pianist."

"No."

"Well, what then? Or don't you know, either?"

"Yes, I know perfectly well. I want to be a mother and have about eight lovely children! Oh, I think that would be the most wonderful thing in the world!"

Ken frowned. "You're too young to be thinking of things like that, Carey. Why, you're only sixteen."

"But my mother married when she was seventeen, and she must have been thinking about it before then, so why can't I? Why, I'm a woman, Ken!"

"But Carey, I haven't even finished school yet. And then I have to go through college."

Carey looked at him in amazement. "But, Ken! What do you have to do with it?"

"Well, somebody has to be the father hasn't he?"

Carey covered her embarrassment with a careless laugh. "Oh, you just don't understand girls, Ken."

Ken turned away. On the floor of this eyrie lay a branch of dead wood. He picked it up. "How the heck do you think this got here? The wind must

have brought it, I guess." He took his knife out of his pocket and began to whittle it as his mind raced, trying to figure out what he could say next.

"I see what you mean. It's just kind of make-believe." He glanced at her questioning, and she became serious and then nodded doubtfully. "Well, let me be in it, too. Wouldn't I do?" He laughed gaily and presently Carey laughed too, hesitantly at first, then more hilariously as their emotion found an outlet. They roared together.

Carey said, "Uncle Beaver told me that when I was picking out a husband must be sure to see that he wasn't pained and to look at his teeth."

This caused more uproarious laughter, then Ken said, "I pass on both counts. Anything else?"

Carey gaily counted the points on her fingers. "He'd have to be a good physical specimen—"

Ken flexed his arm and showed his muscle. "I'm the wiry kind. I had pneumonia when I was ten, but I'm all over it."

Carey was giggling. "He'd have to be religious, but I know you are."

Ken asked, "How do you know?"

They were beginning to forget that it was a game of pretend.

"Because your family is. Your father says grace and you all go to church. But," added Carey, "I don't know if you yourself are, are you?"

"I don't know."

"Why don't you know?"

"Well, how can you tell?"

"Do you say prayers?"

KEN gave a moment's thought to this.

He and Howard had always knelt down to say their prayers, night and morning. He prayed at other times too, when he was in any sort of trouble. Just short prayers, like, "Oh, God! Please get me out of this!" or "Don't let it happen, God," or "Please fix it, God." Not very dignified prayers. He'd always done it. Kind of a hangover from when he was a little boy. His mother said it was all right. The Bible said it was right to pray all the time. But was he really religious? As for thinking about God or reading and studying about Him the way his mother did, he never did that. When he did think about Him it was like Sunday school talk, nothing very close or real. All the same, now and then, he knew there was something beyond and above him, something mysterious. And some day he would have to meet it.

"Well, do you?" repeated Carey.

"Sure," said Ken.

"Then you're religious. Why did you say you didn't know?"

"Well, I thought you meant, sort of, I was good."

"Oh, no! I don't think it's the same thing at all. Well—so you are religious. And healthy enough, I guess—"

"Do I pass?" demanded Ken.

Carey laughed, sighed, reverted to her first theme. "Just think of naming them all! And the color of their eyes and hair—all different!"

Ken felt shut out again. These children of hers!

She straightened up, the soft wind blew her hair back from her face. Clasp her hands she looked far off into the western horizon as if she could see over the little ones sitting on the tall clouds that were gathering around the sun. "I just hope one of them will look like Penny. I think she's the most beautiful baby I ever saw." "Well, if I am the father, maybe one of them will. She's my sister, you know."

He said this so seriously that Carey was brought up short. She gave a little embarrassed laugh. "That was just pretending, you know."

"I know," said Ken.

"I know some other boys," she added. "Do you? Who?"

"Well, not many, because Grandma won't let me go around the way other

girls do. But I know two. I know Paul."

"Who's he?"

"An awfully nice boy I met in the observation car last time we went East. We sat out on the back platform. I got to know him very well."

"Do you write to him?"

"Yes."

"Who's the other boy?"

"Howard."

"Howard who?"

"Why, Howard McLaughlin, your brother."

"Oh, Howard!" exclaimed Ken with the utmost contempt. "Well, you don't know him very well!"

"Well, he is a boy and I know him."

"As well as you know me?"

Carey looked away, holding the top of the parapet, swinging against it. Ken watched her intently and angrily. Suddenly Howard was an intruder in his life—a menace.

"Well, I've known him as long as I've known you, haven't I?" evaded Carey. "Longer. I met him about an hour before I met you."

"That doesn't mean anything," said Ken surlily.

"Oh, Ken! Just think of giving them all their baths and putting them to bed!"

Ken gave an exclamation of annoyance. "Those children of yours! You don't think of anything else! You're just a little girl playing with dolls! I really don't think it's exactly proper!"

"It certainly is," Carey defended herself. "It is a subject that is of the greatest importance to all young people, especially girls, and one has to study and think about the things that are important."

"Let's go back," said Ken abruptly. They went down the rock. Ken stumped home in bad-tempered silence.

It was still light. Cottontails and jackrabbits were out for their evening runs. One tiny pale star twinkled in the sky over the eastern horizon. As they got near to the house they heard hilarious laughter and men's voices shouting. It seemed to come from the corral of the cowbarn.

"What the heck's up?" said Ken, pausing and listening.

"Let's hurry and see!"

They left the road and cut across to the cowbarn. As they came around its corner they saw Gus and Tim and Wink perched on the fence of the corral, watching Howard who was giving a performance designed to take the starch out of Cricket. Pearl leaned against the fence, adding her screams of mirth to the chorus.

Cricket was still in the corral and Howard had closed the gate to the pasture. In the adjoining corral, separated from Cricket's by a three rail fence, he was engaged in a bull fight with a young steer.

HE was a rakish toreador. The long braid that flew from the back of his head had been made out of a horse's tail. A wide sombrero tilted over his eyes. Apparently he was in long black tights and it would have taken close examination to disclose the fact that they were made of a pair of stockings attached to his mother's black, jersey silk bloomers. The cape also was Nell's, a full, red, peasant skirt. This he was flirting about on an outstretched umbrella.

The little steer charged. Howard flitted out of his way bending over, turning a mock-terrified face over his shoulder. The men roared. Pearl screamed with laughter. Howard then turned and charged the steer, opening and shutting the umbrella at him, and the steer fled to the corner of the corral but came out of it again the moment Howard turned his back. Howard whirled to face him, charging with the cape and umbrella but the rollicking steer came on, caught the cape on his little horns and galloped across the corral with it. Howard pursued him with long leaps.

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"Oh, look at him!" screamed Carey as she, too, scrambled up on the fence. Ken climbed up beside her, feeling peculiar, not knowing whether he should be with Howard in the arena or watching with the spectators.

Cricket stood with lowered head, his eyes fastened on the red cape. Now and then Howard, as he rushed past the fence which separated the two corrals, waved the cape over it insultingly. Cricket never moved.

Rob came down from the house, wondering what all the laughter was about. He stood with a grin on his face, holding his pipe in his hand.

Nell joined him and watched, too, but she was anxious. "I don't think he ought to do it, Rob."

Rob made no answer. In a wild run away from the galloping steer, Howard leaped the fence into Cricket's corral, ran around Cricket at top speed, and leaped back into the steer's corral.

Cricket did nothing to punish this insult. He seemed puzzled.

Howard saw that his audience had increased in number. Carey was on the fence and was laughing excitedly, his mother was standing near, his father had a grin on his face. Delightful sensations went to Howard's head. He felt light as air. He leaped the fence into Cricket's corral again and stood directly in front of him at a distance of about fifteen feet. Erect and haughty as a dueler, he doffed his hat and bowed, replaced it, fussing a little to get exactly the right angle. Carey screamed with suspense, and Pearl, watching the bull closely, gave a loud yell of warning. Still Cricket did not move.

Howard squared his legs, took the dueler's position with left elbow bent, left hand gracefully elevated. He slowly extended the umbrella across which hung the red skirt until it pointed at Cricket's nose and gathered himself to charge.

"Oh, Rob! Stop him!" said Nell under her breath.

"Be quiet," said Rob. "Cricket'll teach him a lesson."

Nell's hands wrung together.

"If he gets roused," added Rob.

Howard charged. Cricket lowered his head. Howard leaped back. The bull came at him with a great bellow that blasted the dust of the corral. As nimble as a flea, Howard was back over the fence again. To Carey's amazement Cricket sailed over the dividing fence as easily as Howard had.

Rob chuckled. "I knew he'd do that," he said.

Howard had not figured on this but his reflexes were quick. He crossed the steer corral with long leaps that barely kept him in front of the charging bull's nose. Umbrella and cape went sailing. His hands seized the top rail of the high outer fence of the corral and he went up and over it like a pole vaulter.

While the onlookers yelled with laughter, Cricket nosed and tossed the red cape, gored it with his horns, dropped it, kneeled on it and ground it into the dirt.

Nell's hands were at her heart, trying to stop its terrified pounding. "There goes my skirt," she said.

Howard kept his toreador suit on for the rest of the evening. He was the centre of attraction.

That night, lying in bed, Ken could have groaned out loud. He could not figure out what had happened to depress him so. It was partly the talk with Carey. She had talked to him as she would talk to another girl. Would she have said such things to Howard? No, with Howard she was shy and even a little flirtatious, the way girls are with boys they really like. And after Howard's stunt with the steer and the bull, Carey had hardly known anyone else was around. Kept asking Howard if he hadn't been scared to death, and what he felt like when he saw the bull coming over the fence after him. And everybody had examined Howard's costume and there was great hilarity. If only he could do something which would make him glorious in Carey's eyes. Not something which was just a silly, show-off stunt, but something really heroic. If he could save her! If only it had been he who had saved her in the blizzard, but it was Gus. Maybe he could save her some other way. Maybe on the horse-hunting expedition—if she went. Maybe on that trip, her horse might run away with her and Ken overtake it and rescue her. Or one of the men might get fresh with her. George Dale, last summer had stared at her every minute. And he, Ken, could dress him down. If need be, knock him down.

Lying there in bed Ken gritted his teeth and looked at his knotted fists—they weren't very big. Ken had the long, slender hands of his mother. Well, anyway, something—

Then he had a still more thrilling idea. Carey must see him win a race on Thunderhead! That would be

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heroic enough for anybody! This excited him so that he sat up in bed. This was really possible. He lay down again and went on with the dream. . . . Himself in jockey's silks mounted on the prancing white stallion who was the object of universal admiration. . . . Thunderhead's chin held in by his master's strong hands on the reins . . . the whirlwind of power waiting to be unleashed . . . the exquisite young girl standing by his side . . . "Good luck, Ken! Ride to victory for me!"

There came to him through the walls of the house the sound of his father's laughing and it brought to mind what he had said the other day when Ken had hinted around at this idea of entering Thunderhead in another race.

"Catch him first, Ken!"

CAREY was in the delightful state of mind that any girl is in when two handsome and attractive boys vie for her favor and there is always someone, a male someone, looking at her. She was as gay as a lark. She was always laughing, always singing, always running off with one or another or both of them. Rob and Nell tasted the joy of having a grown girl in the house.

In the evenings she sat at the piano, the boys leaned against it, and they all sang together or shouted or wailed modern blues songs. She knew both classical and light music. She could play an accompaniment by ear. They sang the westerns, "Green Grass of Wyoming," or "The Last Roundup." Or they cleared the dining-room and danced there.

"I'd like to shake Howard," said Nell to Rob at that time when husbands and wives talk intimately to each other. She took the pins out of her hair and began to brush it.

"Now don't interfere," said Rob as he stuck his heels, one after the other, into the bootjack and removed his boots.

"But you can just see how Ken is feeling! He's at a disadvantage!"

"He has the same chance Howard has."

Nell turned around on the little dressing-table bench.

Her cheeks had an unusual color, her dark blue eyes shone. "No, he hasn't the same chance."

"Why not?"

"Because he cares, and Howard's just having a good time."

"Cares?" exclaimed Rob. "Aren't you taking this too seriously?"

Nell smoothed the folds of her gown with the back of her silver brush, then resumed the brushing of her hair.

Rob watched this process, as he never tired of doing. The fine fleece of tawny hair followed the brush until it was in a shining halo around her head.

"I suppose I am," she admitted, "but you only have to see his face, watch the way he sighs, to know that it's serious with him—at least for the time being. And I think Howard's doing a lot of it on purpose."

"I don't," said Rob. "It can't last long anyway. Howard will be leaving for West Point soon."

"Yes, but that's no help," said Nell. "When Howard leaves, Ken may feel he's just a second best with Carey. It would be better if Howard stayed and they fought it out squarely."

Actually Carey distributed her favors without partiality. But it seemed to Ken that Howard received them all.

One morning a message came from the Mexican shearers that they would arrive at the Goose Bar Ranch next day, and Rob went down to the corrals where the boys were working with their colts, and called out that one of them should ride up to Jeremy that afternoon and tell him that they would be moving him down to the ranch the next morning early for the shearing.

The two boys looked at each other, then at Carey.

"Which of us?" asked Howard.

"Ken can go." Rob walked back to the house.



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Ken looked at Carey. "Will you ride up with me, Carey?"

Howard said quickly, "I'm going fishing. Carey, you said you wanted to do some fishing."

Carey decided that she would prefer the fishing to the ride, and soon after the noon meal she and Howard were out digging in the flower beds for worms while Ken saddled up.

He was coming home late in the afternoon when, without intending to spy, he saw a strange scene on the big flat rock which overlooked one of the best pools on Deercreek.

From where he was riding high up along the Saddle Back he got almost a bird's-eye view of it. First there were two figures, then there was one figure, then there was some sort of a scuffle.

A flame of anger poured all through Ken. He didn't want to spy. He turned his face away, took another tack down the mountainside and rode slowly home, knowing what it was to hate his brother, to hate the hate, to feel an utter misery.

He unsaddled Flicka and walked down through the Gorge, going toward the back door. Then he heard them coming up from the stream. They were behind the house and Howard was laughing as if he would burst. Ken stopped walking and stood still. In a moment or two he would be face to face with them. He was trembling.

Howard said, "But, Carey, I didn't mean—"

Carey's voice interrupted him—it sounded as if she were half crying.

Then they turned the corner and came into Ken's view. Carey was soaking wet and covered with mud. She was in a sobbing fury. "Don't you ever speak to me again as long as you live, Howard McLaughlin!" And she rushed in the back door.

Howard turned. The two boys looked at each other.

"What did you do?" demanded Ken. "You tried to kiss her!"

"I did not," denied Howard. Then angry at himself, he gave Ken an ugly look. "What's it to you if I did? Whose business is it, I'd like to know?" And he threw up his hands into boxing position and shuffled his feet threateningly.

The gesture was half in earnest, half in pretense, but it startled Ken and made him jump. He threw himself into a position of defense. Howard shuffled his feet again and began warily to circle Ken. Ken lit out. Howard countered, they began to spar.

After a moment or two Pearl came to the back door to see what was doing.

"Why, you two boys!" she exclaimed. "You ought to be ashamed of yourselves!"

The make-believe fight was becoming a real fight. To Ken particularly it was an outlet for pent-up feelings. He landed a stiff arm jolt in Howard's midriff.

Pearl danced with excitement. "Good for you, Ken! Give it to him again. Oh, cripes! My spuds are burning." She vanished into the kitchen, but a moment later was at the back door again. "Hi-Ya! Go it!"

They did not need to be spurred on. They were fighting as hard as they could now but in deadly silence, their ears on the alert for the sound of their father's step or voice. The hot blood poured up into their faces. Their eyes blazed.

"Where's Dad?" asked Howard as he landed one on Ken's eye.

"Around on the front terrace," said Pearl in a stage whisper.

"Watch him, will you?" grunted Ken, swinging as hard as he could.

The sound of their father's voice came to them.

Kim came around the corner of the house, stopped at sight of what was going on, and stood watching. At first he wore his big grin and his tail waved softly. Then he got the bitter taste of the conflict, his head and tail dropped, he turned and crawled unhappily away.

"Cheese it!" exclaimed Pearl. "Your father's coming!"

"What's the matter with supper, Pearl?" called Rob and his steps came loudly along the terrace toward the back of the house.

"Just goin' to ring the bell, Captain McLaughlin!" said Pearl.

The boys vanished behind the house, and a few moments later were at the supper table. So was Carey. All three had high color. The boys' hair was plastered down in the fashion which meant a lightning session with head and comb under the water faucet. Carey's hair, too, was wet, and she said little and kept her face turned to Nell.

One of Ken's eyes was slowly closing and a purplish hue surrounded it.

Howard had a place on his lip to which he kept touching his napkin.

Rob glanced from one boy to the other but no questions were asked and all the talk was of the shearing which was to begin next day.

To be Continued

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"They rode in with the real horsethief not a second too soon."

Farm House Fire Hazards

Some personal experiences that cannot fail to impress

By "BURNED OUT"

DOES having had a fire that completely destroyed one's home make one an authority on fire hazards? Probably not, but it certainly does give one a sense of what a "touch and go" thing a fire is, how liable we are at all times to loss by fire, and an appreciation of the very large number of ways in which fire can get a start.

I'd like to look back and think of the various fires and near-fires I have known, and how they got started. The list of them might bear some relation to the causes of fire as revealed by statistics, and be a valuable warning.

The first fire I recall was one started on the lot back of us, that burned a neighbor's woodshed and threatened ours. It occurred because he emptied his ashes, which contained live coals, too near some litter that lay up against the building. It was winter, and snow lay on the ground, which is some excuse for his forgetting where the litter lay. Everything seems safe in winter, but isn't—and that's one point to remember. Leave your ashes in the stove until they are completely dead whenever you can, and in the season when your fires are going all the time, take the greatest care where you empty them. Ashes are one of the major causes of fires, it seems.

The second fire was caused by lightning. By this time we were in the country, and one afternoon up came a little cloud, that did not drop enough rain to wet your shirt, and did not send us indoors. However, it did send out one prodigious bolt of lightning, that hit my neighbor's barn, newly filled with hay. Hay that is not quite completely cured makes a trail of vapor that goes off into the sky like the trail from a locomotive, only you can't see it. This column of moist air, being a better conductor of electricity than the air around it, acts like a funnel to draw the lightning. The moral, of course, is to have all barns in which partially cured hay is to be stored given lightning rods, and insurance too.

THE third incident was only a scare, but it occurred in my own home. The house was still under construction, but we were already living in it, and burning rather green poplar wood in the heater. The stove-pipe went up through the floor, through a hole that seemed sufficiently large, but was not yet provided with a thimble.

Now, green poplar or partly green poplar makes an enormous amount of soot and creosote in the pipes and chimney, and one day our pipes burned out. The wood of the floor, although at least three inches away, proved to be a little too close, and got scorched. We were watching it, and as soon as the scorch appeared, we doused it with water, and so saved our new home. But imagine what might have occurred had this happened, say, early in the morning, when the family was in bed, and the man of the house out attending to the stock. Moral: Be careful of stove-pipes going through walls and floors. The ordinary thimble is not good enough. Still more space should be provided. Second moral: Be extra careful when you are burning wood for fuel, and especially if it is poplar, and doubly so if it is not fully dried.

The fourth incident also occurred at home. At the side of the kitchen range was the usual damper, and from time to time a tiny spark would fly out by it, lighting on the sheet of galvanized metal that we had placed under the range. However, the wall of the kitchen was not very far away, and, one day my wife used this space to store the mop and broom. The improbable happened. A spark alit on one of these,

ignited it, and the flames spread up to the curtains of a window above.

With great presence of mind my wife pulled these down, and confined the fire to the galvanized iron until it burned out. I guess one should never leave anything inflammable near a stove, not even clothes that are drying. That's a pretty hard rule, and one often broken. At least one should use judgment in allowing for the distance, and keep the possibility of fire continually in mind.

The next incident was the one that robbed us of our home, after we had barely settled down in it as a finished house. No insurance had as yet been placed on it, because we thought it necessary to have it finished first, and a few weeks seemed of no consequence. Later I learned that a house under construction can be insured, and this is evidently something that ought always to be done. Anyway, I did it next time, you may be sure.

PARAWAX caused this fire. A candle had been placed in a jug, and had burned down until the flame was inside the jug. Here it seemed to melt faster than it burned and when we came to need our jug there was a half-inch of wax over the bottom. The idea was to melt it out by placing the jug in a vessel of water on the stove. However, the women were not ready to do it just yet, and set the empty vessel, not on the stove itself, but on the reservoir, never dreaming that there was enough heat there to melt the wax, let alone ignite it.

No one was in the kitchen when it happened, which perhaps was a piece of luck, for evidently the wax exploded, scattering fire over half the room, if we are to judge by the speed which the fire got a start in eating into the house. By the time we noticed what had happened, it was too late to save anything, and soon all we had in the way of household goods were the clothes we stood in. Within a very few moments, five thousand dollars, money earned the hard way, against the combined handicaps of ill-health, depression and drought, had gone up in smoke. The neighbors came in haste from all sides and by their aid the fire was prevented from spreading to any other buildings.

You would think that that would be enough to cure us of fires, but no, we got another scare a few days ago. We wanted a coal-oil stove for use in the hot weather, and new ones not being obtainable, we bought an old one and had it repaired with solder. There had been a hole in the feed line that let the oil drip on the tin platform just below the burners. When we brought it home, a very little of this remained in the rather saucer-shaped platform, not enough that anyone would think would matter. I attempted to burn it out instead of sopping it up with paper or rags, and the heat was enough to melt out the solder in the hole above, and the flames took a sudden spurt when the released oil came pouring down. We got the thing out of the shed in which we used it just in the nick of time, and the cost was a burned hand, luckily my left.

It would be great to live in a house not inflammable. However, it seems that even in houses made of brick or concrete, there is enough lumber and paper and cloth and so on, to make it not really fireproof. Fire danger is very definitely one of the important things to think of in designing a house, to avoid not only danger spots that make fire a possibility, but fire-traps, places out of which people, adults or children, cannot readily escape.



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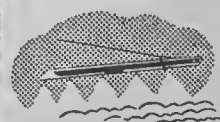
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RU-BER-OLD DIVISION

A PIONEER BELIEF REVISED

Continued from page 5

We might go, with profit, to the valleys of Mesopotamia, which were the cradle of the civilization of much of the ancient world. Here we find great rivers whose waters flow out of the highlands of Turkey, Armenia, Kurdistan and Persia through the broad fertile valley and finally reach the Persian Gulf. There is the Euphrates with its main tributary, the Khabur; there is the Tigris with the Greater Zab, the Lesser Zab, and the Diwala as chief tributaries; and there is the Karun and the Karkeh all joining to make the Shatt Al-Arab which conveys their waters into the sea.

What a sweep of history could be recalled by this valley and these rivers! What a story they could recount of the rise and fall of empires, of the development of mighty civilizations, and of their decay, of the use and abuse of the natural resources with which this area was so richly endowed, of the building of great cities and of their destruction.

It was almost exactly a year ago today that I stood on the ruins of ancient Babylon. As I gazed out from this vantage point to the north and the south, to the east and the west, toward other recently visited centres of ancient civilizations, I could not help but think of the folly of mankind in his abuse of the resources of the earth by which he has been so richly endowed by his Creator.

Immediately surrounding the place where I stood had been the hanging gardens which were one of the wonders of the ancient world. The water of the Euphrates had been used to produce bounteous harvests which sustained millions of people in this fertile area. Down the river was Ur of the Chaldees and not so far away were the plains of Shinar where Abraham dwelt. Up the river, to the northwest, was Racca, founded by Alexander the Great, and a bit farther Jerablus, centre of the ancient Hittite Kingdom. Along the Tigris to the east and north were Nineveh, capital of the great Assyrian empire, and not far away Arbela where Alexander defeated the Persian forces of Darius and thus cleared the path for his conquest of this entire area before he returned to Babylon to meet an early death of debauchery.

AS I stood on these ruins and thought of the glory of these great empires of the past, as I visualized the millions of people who had been sustained by the productivity of the land of this vast region irrigated by the waters of these ample rivers, and then when I remembered the desolation that I had recently seen in many of these places of earlier productivity, any youthful illusions I may have had about the inexhaustibility of natural resources were definitely dispelled.

I realized, of course, that wars had been a primary cause of the destruction and abandonment of many centres of productivity, but I was also aware that wasteful practices of those who occupied the land must be charged for at least part of the desolation. The excessive cutting of timber resulting in destructive floods, the erosion of land surfaces, the water logging of the soil, the silting of canals, the accumulation of alkali, the destruction of organic matter, and the exhaustion of fertility elements all had their effect in making waste places where fertile fields once blessed the land.

To the west of Mesopotamia in Palestine I found a glaring example of destructive soil erosion. Most of the country is made up of limestone hills. Through the millenniums before man

began agriculture there, these were weathered into a fertile layer of rich residual soil which was held in place by protective native vegetation. During ancient cultivation of this area, the soil was held in place by rock terraces. On these hilly slopes olive trees and vineyards did well even on stony land. The terraces with their deeper soil produced many other crops; on the coastal plains citrus fruit flourished; so that all in all the Holy Land was a fertile land in spite of its stony hillsides.

One who sees this country now, however, is impressed by the fact that it has deteriorated greatly as a result of wars, exploitation and neglect. Terraces which maintained the thin layer of soil on the hillsides have been allowed to fall into disrepair with the result that the soil has often been washed off and only bare rock remains. Along the once fertile valley of the Jordan alkali is very conspicuous and much reclamation must be employed before the soil will regain the fertility which is so much desired by those who wish to see a regenerated Holy Land.

In practically all of the countries of the Middle and Far East one is today impressed with the destructive practices which grow out of the scarcity of fuel. In almost every village one sees women gathering up every fragment of manure which is moulded into moist balls and stuck on mud walls or on the sides of adobe houses to dry and then is used as fuel. Thus the soil is deprived of the fertilizer which it should have to maintain its productivity.

In many areas every woody plant is cut to make charcoal which serves as the chief fuel in much of the Orient. Charcoal burners are the great enemies of growing forests. They and unrestrained goats vie with each other in preventing the success of any prospective new forest. In spite of many attempts to limit the destructive activities of charcoal burners and goats by legislation, these twin workers of havoc to young trees continue their evil practices.

THE making available of oil and electricity in some areas may reduce the need of using manure and charcoal for fuel. If this condition can be achieved much advancement may be expected in reclaiming soils which are now in a deplorably low state of fertility.

One of the worst examples of recent despoiling of natural resources is found in the valiant little country of Greece, which had such unfortunate experiences during the recent war. Recently it was my opportunity in connection with a mission sponsored by the F.A.O., to study the devastation by war in this country and to recommend methods of restoring agricultural production. It was really heart sickening to see the havoc that had been wrought. The cutting of timber, the burning of villages, the destruction of roads and railroads, the damage to water storage facilities, and irrigation and drainage systems all show how quickly man may destroy the resources on which he is dependent for his sustenance. Whether these resources are destroyed quickly as in times of war, or whether they are gradually sacrificed to greed, as they frequently are under selfish exploitation, the result is the same. It means poverty and misery for those who follow. The expense of restoration is much greater than that of timely conservation.

Coming nearer home, we find that in many parts of the American west the growing of timber is much less important than the use of the land for grazing. In these areas conservation measures are closely related to grazing practices. Extending from the foothills to the valley bottoms or out to the deserts are millions of acres of cheat-grass range. This is usually inferior to the range made up of native grasses found in areas before they were overgrazed. The cheat grass



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furnishes only a short season of grazing and after it dries, it becomes a fire hazard.

The introduction of more valuable species, such as crested wheat grass, into these areas gives considerable promise since these grasses furnish much more valuable forage than the cheat grass and they also make a better sod to protect the land against erosion.

Unregulated, excessive grazing in many parts of the West has caused marked deterioration in the quality of the range and has resulted in damage from destructive erosion. Experiments in Davis County, Utah, have shown how this erosion can be lessened by limiting grazing and by surface treatments which reduce gullying by heavy rains.

Overgrazing is a practice which is most ruinous and which is seriously condemned by those who are interested in conserving natural resources. It is bad not only because it leaves the soil exposed to destructive erosion, but also because of the secondary effect of allowing undesirables to come into the plant population in place of the more desirable and palatable species which are killed out because of being eaten too close to the ground. Thus, in a few years, a good range may be converted into a very inferior one merely by attempting to graze more livestock than the range is capable of carrying.

I am sure that enough examples have been given to make clear the facts that wasted natural resources may bring great hardship to those who attempt to live in areas where these resources have been destroyed, and that the reclamation of these areas is

more difficult after they have been devastated than would have been their preservation by a conservation program. Whether it be a forest, a range, a water shed, the slope of the land, or the fertility of the soil, preservation is much easier than restoration.

It is man himself who determines whether he will destroy and devastate and thereby pass on to posterity poverty and misery or whether he will think of the natural resources as a stewardship which he should use for his own needs, but which he should pass on to his successors undiminished and unspoiled by his use.

An enlightened humanity as well as a conscientious one is necessary if the better things of the world are to be developed and conserved so that those who are living today as well as those who are to live in the future will receive the greatest benefits of the bounties of nature.

If we believe this to be true, we are forced to the conclusion that education lies at the very foundation of the solution of this whole problem. This means an education that will enable the technical workers in the field to carry on the investigations that are required to discover the facts on which national systems of management will be based. It also means the education that brings the public generally to the consciousness that wisdom lies in the direction of conservation rather than in the direction of exploitation.

This education must become so much a part of the thinking of our whole society that it will find a place in the instruction of the elementary school and college, as well as being recognized in the counting house and the halls of legislation. If it is to succeed, it must be more than a mere veneer; it must be part of the fibre of our civilization. Only in this way can our civilization persist and continue to develop instead of becoming one with Nineveh and Tyre.

The above article was given as an address before the Agricultural Institute of Canada, at Lethbridge, June 24, 1947.

A Moving Ceremony

THE memorial to the men who fell in the Battle of Britain was recently unveiled and dedicated in Westminster Abbey by the King. Richard Dimbleby described the moving and magnificent ceremony, in the BBC's "Radio News Reel."

"The biggest congregation since the Coronation filled every vacant space in the Abbey. More than 3,000 mothers and fathers and widows of the airmen who died in that autumn battle of 1940. They stood motionless as the great procession moved slowly in from the west door; they were like the dark immobile banks of a richly colored stream.

"The Chaplain-in-Chief of the Royal Air Force was at the head of the two processions, and behind him was the Lord Archbishop of Canterbury, and then all the color and splendor of the banners of Westminster, the gold and jewelled Cross, the scarlet robes

of the King's scholars, and the snow white surplices of the choir. The King, who with the Queen walked immediately behind the Dean of Westminster, wore the uniform of a Marshal of the Royal Air Force."

Dimbleby said that it was in the singing of the famous hymn, "O God Our Help In Ages Past," that suddenly there seemed to surge into the Abbey the whole devotion and homage of millions who were listening far away from Westminster, millions to whom the acts of superb courage performed by "The Few" meant deliverance from Hitler in those hot summer days of seven years ago.

"The ceremony of Dedication took place in the Henry VII Chapel, the Chapel of the Order of the Bath, hung with the splendid banners of the Knights Grand Cross. At the eastern end, at the extreme tip of the Cross which is the shape of the Abbey as an airman sees it, is a central window bay, and this is the Memorial. A huge Royal Air Force Ensign hung across it, and on a desk of wrought iron lay the Roll of Honor."

Dimbleby told listeners how the clear light of day shone through the 48 richly colored panes of stained glass of the Memorial window which bears the badge of every squadron that fought in the Battle of Britain. After the ceremony Their Majesties walked slowly to the west door as the march "Crown Imperial" was played, passing the 3,000 relations who stood motionless with their faces to the East. The Abbey slowly emptied and there was left behind the glowing, living window to commemorate "The Few" for ever more.

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"He said a naughty word and I had to wash out his mouth with soap."

CANADA PACKERS LIMITED

REPORT TO SHAREHOLDERS

The twentieth fiscal year of Canada Packers Limited closed March 27th, 1947.

The following are the key figures, setting forth volume and profit, with the comparative figures of the previous year:—

	Year Ending March 1947	Year Ending March 1946
Sales - - - - -	\$204,068,650	\$208,997,520
Tonnage - - - - -	1,373,000,000 lbs.	1,526,000,000 lbs.
Profit after all charges except Income and E.P. Tax - - -	\$3,758,852	\$4,620,712
Income and E.P. Tax - - -	1,699,208	2,803,931
Net Profit - - - - -	\$2,059,644	\$1,816,781

- NOTE:
- 1. Tonnage,—weight of product sold,—was down - - - - 10%
 - 2. Dollar Sales were down only - - - - - 2.4%
(reflecting an advance in average price of products sold of approximately 8%).
 - 3. While Profit before Federal Tax was down approximately \$860,000; nevertheless,—because of the reduction in Income and E.P. rates (applied to the lower Gross Profit),—Net Profit was up approximately - - - - - \$200,000.

The following is a comparison of the main items of the Profit and Loss Statement with the corresponding figures of the previous three years. For clarity in comparing years, each item is also expressed as a percentage of dollar sales.

Out of each Sales Dollar there was paid:—

	1944	1945	1946	1947
For Raw Materials - - - -	83.60c	82.35c	81.33c	80.21c
For Wages plus Salaries - -	6.77	7.35	8.06	9.10
For Services (General Expense)	3.46	3.83	4.13	4.25
For Materials and Packages -	3.08	3.32	3.76	4.06
For Taxes (Municipal, Provincial, Federal) - - - -	1.59	1.70	1.48	.98
For Wartime Inventory Reserve	.24	.25	—	—
For Depreciation on Fixed Assets - - - - -	.45	.41	.40	.43
	99.19c	99.21c	99.16c	99.03c
Remainder,—Profit from Operations - - - - -	.81	.79	.84	.97
Income from Investments, etc.	.01	.01	.03	.04
Total Net Profit for the year, on each dollar of Sales - -	.82c	.80c	.87c	1.01c

- The products handled by the Company fall into four groups,—viz:—
- LIVE STOCK PRODUCTS, comprising all products derived from live animals:—
 - Meats,—Beef, Veal, Pork products, Lamb and Mutton;
 - By-products,—Hides, Skins, Tallow, Bones, Tankage, etc.
 - Tonnage of this group - - - - - 460,000,000 lbs.
 - OTHER FARM PRODUCTS, comprising,—
 - Butter, Eggs, Cheese, Poultry, Frosted Foods, Fruit, Vegetables, etc.
 - Tonnage - - - - - 207,000,000 lbs.
 - NON-FARM PRODUCTS, comprising,—
 - Edible Oils, Shortening, Soap, Fish, Fertilizers, Stock Foods, etc.
 - Tonnage - - - - - 576,000,000 lbs.
 - *MANUFACTURING, comprising,—
 - Canned Meats (sold chiefly to UNRRA) and Canned Fruits and Vegetables.
 - Tonnage - - - - - 130,000,000 lbs.
- 1,373,000,000 lbs.

*See footnote next column.

The outstanding feature of the year's result was the extremely small profit derived from the first two groups,—viz. Live Stock Products, and Other Farm Products. Total weight of products in these groups was 667,000,000 lbs.

Net profit for the two groups was - - - - -	\$233,592.00
equivalent to - - - - -	3½c per 100 lbs.
otherwise - - - - -	1/30c per lb.
Profit as percentage of Sales - - - - -	1/6 of 1%.
On the other two groups, totalling 706,000,000 lbs., net profit was - - - - -	\$1,752,673.00
equivalent to - - - - -	24.8c per 100 lbs.
otherwise - - - - -	¼c per lb.
Profit as percentage of Sales - - - - -	2.6%.

The very low profit on Live Stock and Other Farm Products was due to conditions arising out of war controls. On all these products, especially meats and poultry, supply was much below demand, and prices paid by black market operators were, for long periods, above the equivalent of the established ceiling prices.

During those periods, processors who respected the ceilings were forced either to buy the live stock at prices involving loss, or to withdraw from operations. For the regular firms in the Packing Industry to cease purchasing live stock was, of course, impossible. Therefore, the losses had to be taken.

In this situation, the record of the Packing Industry as a whole was a highly creditable one. With only rare exceptions, inspected packers, large and small, scrupulously adhered to the regulations and did everything in their power to assist the officials of the Wartime Prices and Trade Board.

On their part the directing officers of the Board made a strenuous and continuous effort to enforce ceilings. But the task was a difficult one.

The difficulty was that of securing evidence. Only two persons, the seller and the buyer, knew the facts of illicit transactions. As both these persons were exposing themselves to heavy penalties, they were most undependable witnesses. The record of the illicit transactions, in the accounts of seller and buyer, furnished no evidence. Goods were invoiced at ceiling prices. Payments in excess of ceiling were in currency, and were made 'under the counter'.

In the main, violations were confined to processors on the fringe of the Industry. These persons found themselves in a position to greatly increase their volume, at margins of profits much higher than normal. The fact that they were spread throughout the cities, towns and villages of all Canada made the task of catching up with them a very difficult one. In relation to offences, there were extremely few convictions.

Under war conditions, steps had to be taken to ensure an even distribution of the available food. The necessary war effort could not otherwise have been sustained.

The Wartime Prices and Trade Board was set up for this purpose. It was directed at the top by a group of men of the highest ability and character. The job they did was one of the most essential of Canada's total war effort. On the whole it was highly successful. But its enforcement of ceilings in respect of food left much to be desired.

The following notes are set down in the hope they may prove useful in the field of animal products, if the necessity to establish controls should again arise:—

- 1. When food is scarce and purchasing power high, enforcement of ceilings is a most difficult task. The public may unreservedly endorse the principle of price control, but public opinion, of itself, cannot be counted upon to check illicit operations.
- 2. Only by an alert and firm Enforcement Branch, can controls be made effective. The post of Chief Enforcement Officer calls for a man with the highest qualifications of ability, courage and cool judgment.

*Although the foods processed in this department are farm products,—meats, vegetables, fruits,—nevertheless the operation is one which does not form a necessary, or customary, part of packinghouse operations. The plant required for the processing is specialized and expensive. It is for these reasons that these operations are segregated as 'Manufacturing'.

3. In respect of meats, illicit transactions begin at the stage where the meats pass from the processor to the retailer. But the retailer is clearly an unwilling participant. He does not wish to pay more than the ceiling price, and with intelligent leadership could be secured as an ally of the Enforcement Branch.
 4. Enforcement is bound to fail unless penalties are severe enough to deter offenders. (A fine of a few hundred dollars is no deterrent to a violator who is making illicit profits of thousands.)
 5. Cancellation of licence is the ultimate and the only effective deterrent. This is a drastic penalty which should be imposed only in case of flagrant and repeated violations, involving the head or principal officers of the firm.
- Only a few cancellations would be necessary.

One result of black market operations was that producers received a higher price for their live stock than the equivalent of the ceiling.

It is only just to point out that this involved no breach of the regulations, either technical or moral, on their part. Their animals were sent to market as usual, and were sold on the market, openly, to the highest bidder. No other system was possible.

The Wartime Prices and Trade Board wisely refrained from imposing ceilings on live stock. This was tried in United States and proved completely unworkable.

In view of the extremely poor results on live stock and other farm products, it was fortunate that volume in the other two groups was high, and profits normal (one-quarter cent per lb.).

In the fourth group the chief product was one developed in the Laboratories of Canada Packers, viz. Canned Blood Sausage. All this product was sold to UNRRA. As suggested by the name, the product contains a substantial percentage of cooked blood (from inspected animals). This gives it a high protein content. Other ingredients add important calcium and carbohydrate values. Because of its high nutritional value, convenient form, and comparatively low cost, Canned Blood Sausage was a very useful food for UNRRA distribution.

Once this product had been accepted by UNRRA, the Canadian Meat Board directed that the formula should be passed on to all Canadian plants equipped to produce it. Shipments of Blood Sausage formed a very important part of Canada's total sales to UNRRA. During 1946 total shipments from Canada were 63,000,000 cans.

While this quantity was small in relation to UNRRA's over-all relief shipments, nevertheless it is gratifying that a product developed entirely in a Canadian laboratory should have played even as substantial a part in the relief programme of 1946.

With the winding up of UNRRA, orders for Canned Blood Sausage have ceased. It was essentially an emergency food. Notwithstanding its high nutritional value and low price, its colour subtracts from its appeal to the civilian consumer.

The experience of this year proves again the wisdom of the Company's policy of diversification. In 1927 when Canada Packers was formed, live stock plus other farm products comprised 79% of the Company's total volume. In the year under review, the corresponding percentage was 49%. More than half the volume and 85% of the profit were contributed by groups three and four.

It will be recalled that following World War I, deflation of food prices set in during July 1920,—approximately eighteen months after Armistice Day. That deflation was brought about by the fact that, by July 1920, food supplies had begun to catch up with effective demand.

Following World War II, it was expected that the greater destruction of property and the greater displacement of population, in Europe, might result in a more prolonged period of dislocation. However, it seemed likely that the restoration of normal food conditions might follow the same general pattern as in 1919/20;—i.e. a period of advancing prices, to be followed at some time either by a slide or a collapse.

(It is important to remember that the world's food supply is produced from year to year. If one year's crop is inadequate, hunger [perhaps starvation] may be the result. However, a bountiful world crop in the following year can at once restore normal conditions. The hunger of the previous year does not carry over.)

World War II ended with V-J Day, August 15th, 1945. That is a full two years ago.

But, as yet, world food supplies have not caught up with demand. Prices of most staple foods are not only above those of V-J Day, but actually, in the case of many essential foods, are still at an all-time high.

The following table gives a comparison of prices (in Canada) of animal products and cereals from 1939 to 1947.

CANADIAN FARM PRICES, 1939 - 1947

	Average March 1939	Average March 1941	Average March 1943	Average March 1945	Average July 1947
Good Steers, live, Toronto - - - -	6.78	8.62	11.77	11.54	14.47
Hogs, B-1 dressed, Toronto - - - -	12.25	11.33	17.16 32}* 17.80	1.62}* 81½}* 17.80	22.01 .97}* 22.01
Lambs, live, Toronto -	9.10	11.14	15.91	14.92	17.21
Chickens, Milk Fed A, Toronto - - - -	24½	28½	32½	35	39
Eggs, 'A' Large, Toronto - - - -	21½	20½	33½	35	39¾
Creamery Butter, Toronto - - - -	21¾	35	35 81½}* 35	35 81½}* 35	50½
Cheese, f.o.b. Factory, Ontario - - - -	11	14½ 1}* 14½	22¾ 1}* 22¾	20 3}* 20	25¼ 3}* 25¼
Wheat, No. 1 Nor., Ft. Wm. - - - -	59½†	76¼	97⅞	1.25‡	1.55‡
Oats, No. 2 C.W., Ft. Wm. - - - -	28½	35¼	51	51½ 10}§ 51½	65
Barley, No. 1 Feed, Ft. Wm. - - - -	35½	50¾	61⅝	64¾ 22½}§ 64¾	93
Corn, Ontario Yellow, Toronto - - - -	65	86⅞	1.17	1.27	1.27

* Subsidies, Federal plus Provincial.

† Official Wheat Board price, March 1939, 80c.

‡ Wheat Board to make participation payment in 1950.

§ Equalization payments.

It will be seen that each price in July 1947 is at the high point of the eight-year period.

But all these prices would be higher still except for the operation of controls. The chief control exists in the fact that (by mutual governmental agreement) Canadian foods are not permitted to move to the United States.

In that country, prices for the same products throughout the same period are shown in the following table.

UNITED STATES FARM PRICES, 1939 - 1947

	(Chicago Market)				
	Average March 1939	Average March 1941	Average March 1943	Average March 1945	Average July 1947
Steers, 1200/1500 lbs. -	11.50	11.30	15.95	16.25	30.68
Hogs, light (live) - - -	7.70	7.80	15.60	14.75	26.00
Lambs, live - - - - -	9.25	10.90	16.30	16.40	24.46
Chickens, Spring - - -	22½	22½	28	29	31
Eggs, Standards - - - -	16¾	17¾	38	34¼	43¾
Butter, 90 score - - -	23¾	30¾	47¾	41½	65¾
Cheese, twins - - - - -	11¾	14¾	23¼	23½	33½
Wheat - - - - -	70⅞	91¾	1.49	1.76⅞	2.36
Oats - - - - -	32¾	39½	64¾	82¼	1.01⅞
Barley - - - - -	47	57	92	1.24¾	1.75
Corn - - - - -	51¼	69½	1.02	1.20½	2.19⅞

The startling fact regarding the two preceding tables is that United States and Canada are two of the chief food-surplus countries of the world. That prices in these two 'surplus' countries should have remained at these record levels is due to three main factors:—

1. The pull on North American supplies due to the acute shortage of food in Europe. (This shortage is aggravated by the fact that political disharmonies prevent certain natural movements of food;—e.g. grain from Eastern to Western Germany.)
2. The fact that in United States and Canada, purchasing power,—and consequently domestic demand for foods,—is at an all-time high.
3. The further fact that, in the face of this record demand (export plus domestic), production of live stock in United States and Canada seems definitely headed downward. Inspected slaughterings of Cattle and Hogs for the last three years have been as follows:—

	UNITED STATES		CANADA	
	Cattle	Hogs	Cattle	Hogs
1944	13,960,337	69,016,982	1,354,104	8,766,441
1945	14,538,405	40,959,809	1,820,127	5,683,727
1946	11,413,325	44,393,920	1,666,310	4,253,511

Is it possible to forecast the course of live stock prices in Canada for the years immediately ahead?

No attempt at a comprehensive answer to this question will be made. But all the following factors have a bearing.

Prices cannot continue to advance indefinitely. At some point they must level off, and at a later date a substantial decline seems inevitable.

However, the immediate trend in Canada seems upward rather than downward.

This is certainly the case in respect of Hogs. An advance of 2c per lb. in the price of Wiltshire Sides has been announced for September 1st. The present Bacon contract with England would seem to ensure the maintenance of the September 1st level until the expiry date of the contract,—viz. December, 1948.

As to Cattle, the fact that Steers in United States are selling at twice the Canadian price would indicate that the immediate price trend might also be upward.

It must be remembered, however, that the great Beef exporting areas of the world are South America and Australasia. In both these areas, Cattle prices are much lower even than the present Canadian level. When transportation facilities are restored, prices of Beef on the open world markets may soon be brought to a level based upon costs in the exporting countries.

In the present period of acute shortage and record prices, it seems difficult to recall that the ten-year period immediately before the war was one of burdensome surpluses and ruinous prices.

The war crisis brought about a clearer realization of the fact that a nation's chief asset is the physical health of its citizens. An understanding of problems of nutrition has been advanced as in no previous period. Each nation will make the better feeding of its people a main objective. Except for widespread economic breakdown, the world demand for food will be higher than in the pre-war period.

Whatever happens, it is unlikely that the ruinous food prices of the 1930's will ever recur.

Nevertheless, a time will undoubtedly come when food-surplus countries will have to 'compete' for the available world markets. When that time comes, each food-exporting country will be forced to offer its surplus in the form of those products which it can produce most efficiently.

In the case of Canada,—one of the chief food-surplus countries,—two products stand out. These are the two food products which, above all others, Canada can produce in competition with the world.

They are Wheat and Bacon.

There seems little danger of Canada reducing her Wheat production. But the record of the last two years is proof that a serious danger does exist in the case of Hogs.

Between 1944 and 1946, inspected Hog killings were cut in half. Only by increasing and maintaining Hog production can Canada make her Agriculture safe.

The main objective of Canadian agricultural policy should be immediately to build up her Hog population. For her Wiltshire Bacon there is an immediate, and a continuing market,—namely Great Britain. And Great Britain needs Canada's Bacon more urgently than ever before.

Ontario and Alberta are the two chief Hog-producing Provinces. In both these Provinces the Departments of Agriculture have recently launched active campaigns to stimulate Hog production. The Ontario Hog Producers' Association and the Alberta Livestock Co-operative Limited have joined actively in these campaigns. It is to be hoped other Provinces will take similar measures, especially Saskatchewan, Manitoba and Quebec.

It is felt that this year a more extended reference than usual should be made to Labour relations.

The Directors recognize, without reserve, that the first claim on the earnings of the Company should be that of Employees,—the men and women of all ranks whose working lives are spent in the Company's service.

Plant Employees are represented by their Union,—the United Packing-house Workers of America. With the Union, except at times when negotiations are under way, relations have been cordial and co-operative. This is mentioned because widely published threats to strike, each time an agreement is being negotiated, may have given Shareholders,—and the public generally,—a wrong impression.

During the war-period wage advances have been frequent and substantial. Following is a summary of the advances:—

	MEN	WOMEN
During 1941, 1942 and 1943, Cost of Living Bonuses reached a total for men of \$4.60 per week; and for women, 18.4% of their wages. In 1944 these were converted to permanent hourly increases of	9½c per hr.	7c per hr.

In addition to this the following successive general increases were negotiated:—

	MEN	WOMEN
In the agreement of 1943	5 c per hr.	5 c per hr.
In the agreement of 1945—6.8%, equivalent to	5 c per hr.	3½c per hr.
In the agreement of 1946	10 c per hr.	10 c per hr.
Total rate increases from 1939 to 1946	29½c per hr.	25½c per hr.

In addition, there have been many upgradings and individual increases. These with the above general increases have resulted in raising average rates per hour as follows:—

	MEN	WOMEN
August, 1939, average rate per hour	50.8c	32.8c
March, 1947, average rate per hour	88.1c	63.5c
Increase	37.3c	30.7c
Percentage increase	73.4%	93.6%

The average advance in hourly rates throughout all Canada, for the same period, as published by the Dominion Department of Labour, has been 54.6%*

The increase in hourly rates does not, of course, represent a corresponding advance in 'real' income,—that is, in income measured by purchasing power. Subtractions must be made for increase in the cost of living, also for Income Tax;—the latter offset to some extent by Family Allowance payments. It is probable, too, that the actual increase in the cost of living is somewhat greater than that reflected in the official table of the Dominion Bureau of Statistics,—viz. 34.8%†

However, when all allowances have been made, the increase in real income of Plant Employees, as compared to 1939, is certainly not less than 15%.

And this in spite of a substantial reduction in number of hours worked (1939,—average weekly hours 46¼; 1946,—average weekly hours 42½). If hours worked had been the same, increase in real income would have been at least 22%.

Over and above these rate increases, important supplementary privileges have been granted. These include:

- Improved vacation schedule;—now {after 1 year —1 week, after 5 years—2 weeks, after 20 years—3 weeks.
- Rest periods with pay—10 minutes, morning and afternoon.
- Night work premium—5c per hour over corresponding day rates.
- Guaranteed minimum of 37½ hours work per week—or pay in lieu of work.
- Pay for eight public holidays.

These supplementary privileges represent an annual cost to the Company of approximately \$850,000, equivalent to 7.4c per hour.

Following the practice of previous years, an important share of the profits was distributed to Employees in the form of Bonus.

The sum distributed at the year-end was \$1,250,000. (Bonus distributed in March, 1939, was \$216,000.)

The practice of profit sharing has been in operation for thirteen fiscal years. Within that period, total profit-sharing payments have been \$8,910,000.

Total Dividends to Shareholders within the same period have been \$9,550,000.

Total Sales for the same period have been \$1,716,000,000.

J. S. McLEAN,
President.

Toronto, August 29th, 1947.

*Preliminary figure for October, 1946, reported in Department of Labour News Release No. 3,000 of June 19th, 1947.

†Dominion Bureau of Statistics Cost of Living Index for July 1st, 1947, basis August 1939=100.

It Pays To Get Together

Great Plains Horticulturists Meet at Morden Experimental Station

IF anyone wants to know what the Dominion Experimental Station at Morden, Manitoba, means, or should mean to the 2,500,000 people in the prairie provinces, he or she should visit Morden sometime when a group of specialists in the various horticultural fields are there. It is only necessary to mingle on the Morden grounds with people like these, for a comparatively short time, to realize that the prairie provinces have something to be proud of in this experimental station, which is primarily devoted to the breeding of fruits, vegetables and ornamental plants, and their dissemination throughout the prairies for the enrichment of rural life.

The station includes nearly a section of land, of which 230 acres are devoted to horticulture; and on these acres are to be found thousands of species and varieties of trees, shrubs, flowers, tree fruits, small fruits and vegetables.

I went down to Morden during the last week of August to attend the meeting of the Northern Great Plains group of the American Society for Horticultural Science. Nearly a hundred people found their way there from 11 states and provinces, including the two Dakotas, Minnesota, Wisconsin, Wyoming, Colorado and the four western provinces, as well as Ontario. It was a memorable experience to meet with this group whose profession is the development of beauty combined with utility, and to hear them discuss the special horticultural problems of the great central plains region of North America, from the standpoint of their combined experience.

Farmers of western Canada have occasion to know that the great plains area of Canada possesses distinctive climatic conditions, which are very similar to another large area lying south of the International Boundary. This huge area in the interior of North America provides a special challenge to all of those who have a fondness for trees, shrubs and other growing plants. Our climate is very selective, and sometimes rigorously excludes plants of great utility and beauty. It then becomes the task of the horticulturist to find something to replace the varieties or species which will not stand our cold, dry climate. Many useful plants have been discovered that are native to the country. Sometimes these are in themselves good enough for use. More often, however, the plant breeder is faced with the necessity of crossing these native hardy plants with those of improved quality and greater usefulness, and of growing many thousands of open-pollinated seedlings, in the hope that among them one will be found worthy of wide use.

Nature has many secrets, which mankind has not yet discovered. She has provided an environment for growing things which is so complex, because of variations in soil, rainfall and temperature, that she is often able to confound the efforts of the ablest scientists, the most ardent horticulturists and the most active plant explorers. It was an interested group of this kind which gathered at Morden from August 25 to 27, because they all faced the same wide variety of problems. Some with vegetables, others with fruits, and still others with ornamental plants, all are seeking hardy plants of beauty, utility or both, which will supplement the sparse provision which nature has made for beauty on the open plains.

These gatherings of state and provincial horticultural specialists in the great plains area have been taking place since 1918. For three years during the war they were discontinued. Except for very special circumstances such as

war, they meet every year in some state or province; and at various times have met in Ontario, Manitoba, Saskatchewan, Minnesota, North Dakota, Iowa, Wisconsin, South Dakota and Wyoming. Next year they will meet in Cheyenne, Wyoming, where conditions are severe, the altitude much higher than at Morden, and horticultural problems therefore considerably different. Two years ago they met in Minnesota, where Dr. W. H. Alderman and his able colleagues at the University of Minnesota have made so many useful and valuable contributions to the horticulture of this region. A great many prairie gardeners have tested out a considerable number of Minnesota seedlings, some of which have been found good enough for naming and introduction as new varieties. Many of our varieties have come to us from North and South Dakota as well, while others have originated at our own institutions such as Morden, the Provincial Horticultural Station at Brooks, Alberta, and our provincial universities.

THREE days is all too short a time in which to look over the vast amount of material at the Morden Station. One full forenoon was devoted to the ornamental plants, another to fruits, and a third to vegetables. Afternoons and evenings were devoted to discussion of special problems. There was also the new processing laboratory to visit and the whole question of canning and preserving fruits and vegetables to be discussed by specialists in this horticultural field. Then, too, these men know better than anyone else that sometimes it is the root rather than the top of the tree or plant that dies. Roots on which varieties are grafted must be hardy if the tree is to survive. Here was a whole field of knowledge about which too little information is available. The stocks in use for supplying the great commercial orchards of the continent are of little value in the great plains area. New stocks must be found, and the search is bound to be long and arduous.

Among vegetable crops there are several large fields of unexplored knowledge. These include not only the best varieties of vegetables for the home garden, but varieties suitable for canning purposes, the fundamental problem of maintaining pure strains and varieties of vegetable seed, the newer knowledge about how to prepare vegetables for quick freezing, and what varieties to use for this purpose. The University of Minnesota has done a great deal of work on quick-freezing while the Dominion Experimental Station at Summerland, B.C., has for years pioneered in the field of fruit processing. The new laboratory now getting nicely under way at Morden will add to this field of knowledge with particular application to prairie conditions. How to preserve in cans, and as quick-frozen foods, the maximum proportion of the valuable vitamins and other nutritive properties of food, is the task of the expert in food processing. Which of our hundreds of varieties of fruits, for example, should be discarded because of inferior food value? Which make the best jam, jelly, juices or preserves? Which require the least sugar, or what processing treatment will help to make less offensive any undesirable quality? None of these problems is likely to be solved by one individual. The exchange of opinions and results may shorten the time by years.

There is something stimulating at these international gatherings. Soils, climates and varieties of trees, fruits or vegetables know no international boundary, hence the importance of these meetings by horticulturists of the

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great plains. The meeting this year was, it is said, larger than any previous meeting. It was, I gathered, at least equal to any other meeting in enthusiasm.

One bright spot in the three-day meeting was the presentation to Mr. William Godfrey, retired head gardener at Morden, of the Stevenson Memorial Award—a gold medal awarded occasionally to some distinguished horticulturist, for meritorious service, by a committee of the Manitoba Horticultural Association, in commemoration of the splendid pioneer work of the late A. P. Stevenson at Morden. This pleasing ceremony took place in the shady picnic grove at Morden, the presentation being made by M. B. Davis, Dominion Horticulturist, Ottawa; and a tribute to Mr. Godfrey's services to Manitoba's horticulture was given by Dr. F. L. Skinner, the veteran nurseryman of Dropmore, Manitoba.

It is impossible here to report the proceedings in detail, but of special interest to all was a splendid illustrated talk given by Mr. Davis about his visit to Europe last year, when he visited not only England, Scotland, but Denmark, Sweden and Norway. More particularly perhaps, the all-too-brief account of the scientific work in horticulture which he found under way at stations in these various countries, served to whet the enthusiasm of all present from the fields of horticultural research.

The group was also able to see, most of them for the first time, two new films prepared by the National Film Board, on the beautification of farm homes, one taken in eastern Canada and the other in the three prairie provinces. Of the two, the western film was thought to be much superior; and should be effective, where shown, in influencing numbers of people to plant trees, flowers, shrubs, fruits and vegetables for the improvement of general farm living conditions.—H. S. F.

CROPS FROM CACTUS LAND

Continued from page 9

naturally productive and is unusual and difficult to handle. Better soil than that on the Levee farm has been included in a community pasture not far away—taken out of cultivation entirely. He has studied his soil carefully and handles it with the use of the one-way disc, the Noble blade, the duckfoot cultivator and the rod weeder, in about this order of preference.

He told me, however, of a theory he had developed which he had not yet been able to get completely accepted by the Dominion government authorities. These blow-out spots or "burnouts" as they are sometimes (and I should think erroneously) called, dot the surface of the unbroken native soil with considerable frequency. They make the surface uneven, because in walking along one will suddenly drop from eight to 15 inches, as though some agency many years ago had scooped out at these places several scraperfuls of dirt. Over long periods grass has again grown over these blow-out spots, but the soil underneath the grass is impervious to water. Rainfall doesn't soak in, but stands in these low spots. The problem of the man who wants to grow crops on this land is to make the soil take in and hold moisture. It is a rather curious fact that roots will penetrate where water cannot easily get through, though they must have moisture to get there.

Mr. Levee, therefore, concluded that if the water would not penetrate this blowout hardpan, he must find some agency which would soften it up, so that the moisture would enter and be conserved by tillage. The agency of which he must take advantage, he decided, is frost. Everyone knows that during the winter, especially the fairly

severe winters we have in western Canada, the soil will freeze to a considerable depth, and that in the freezing process, such moisture as there is in the soil will expand as it freezes, with the result that we have the "mellowing" influence of frost, which breaks up and loosens otherwise hard soil. This effect having been secured by frost, it becomes the responsibility of the farmer on such land to keep it from drying out and settling together again into an impervious layer.

At any rate, Mr. Levee starts the season off by getting a good mulch on his soil as early as he possibly can, and his success seems to lie in the proper choice of tillage implements to suit the particular condition of the soil at the moment, or the special job which that particular cultivation is expected to accomplish. He was very emphatic that cultivation at the right time and with the right implements was most important.

I was much interested in noting as we went around the strips in the quarter growing Rescue wheat, that the green portions of the field, apparently untouched by the heat as yet, were, as he pointed out, on the burnout spots, and that the good loamy soil was where the heads had been scorched. I would like to find out why this was the case. I haven't found out yet and Mr. Levee could not tell me.

With limited moisture to be expected in the area, and grain the obvious crop for cultivated land, there is practically no livestock on the farm. The rotation is a straight two-year, fallow-grain rotation. Mr. Levee showed me, with some chagrin and an occasional chuckle which indicated anything but pride in the crop, a field of flax which took in the entire half-section he had originally bought before taking over the home farm. This half-section had been put in wonderful shape. They were pleased with its condition at seeding time. It had been one-wayed and cultivated and floated and re-cultivated and re-floated until it was in perfect seeding condition as nearly as they could get it. On these Dominion illustration stations strict account is kept of costs, and Mr. Levee was able to tell me exactly that it had cost \$8 and some odd cents per acre to prepare that half-section of land for flax. The crop had been a severe disappointment, yet to me, although the crop was less forward than many others I had seen, it was greener and healthier looking than the majority of crops grown on better land. The final outcome, of course, will tell the story, and the hot weather since experienced will not have helped it.

There is not much money to be made from operating a Dominion Illustration Station. The government is not very generous in cash payments. Indeed, it would defeat the whole purpose of the station if it were. If a good farmer expected to be fully paid for the time spent in talking to visitors and handling small plots and that sort of thing, he would probably let someone else take it over. On the other hand, if he expected to be paid out of what he could learn, and to secure his reward from the suggestions he could pick up from time to time, and by observing new varieties and new crops growing on his farm, he would probably find, as the majority of illustration station operators have found, that it is worthwhile.

Mr. Levee told me that he has estimated, within the area with which he is acquainted, that there are probably some 200,000 acres of this blowout soil which could be made productive if only the right men could farm it. Many men would starve on it, others would eke out a measurable existence, and some, probably only a very few, could farm it well. That is the reason some of it has been thrown into community pasture, while a great deal more lies under its cover of grass and cacti.

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Slip causes wear. Less slip means longer wear. Goodyear Sure-Grip's lugs bite in, grip firm... reduce slip to a minimum. It is a fact... **PROVED** by scientific test and practical farmers for more than eight years... Goodyear Sure-Grip's uniform, balanced tread design, pulls better, slips less than tires with connected lug tread.

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YORKTON—940 K.C. ON YOUR DIAL

CKRM MON. - WED. 9:15 P.M.
and FRIDAYS
REGINA—980 K.C. ON YOUR DIAL

CFQC MON. - WED. 9:15 P.M.
and FRIDAYS
SASKATOON—600 K.C. ON YOUR DIAL

ALBERTA

CFGP MON. - WED. 8:15 P.M.
and FRIDAYS
GRAND PRAIRIE—1050 K.C. ON YOUR DIAL

CFCN MON. - WED. 9:00 P.M.
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CALGARY—1010 K.C. ON YOUR DIAL

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The Countrywoman

Mountain Way

By GILEAN DOUGLAS

*Beauty and silence and a way of going
That is the cloud's way and the leaf's way
And the steady flowing
Of water, clear and cool,
From the heart's spring to the sea.
Oh, let it be*

*Always like this! Let the day
Dance blue in the sun forever,
Let the stars glow deep in night's pool
And time be a wind that never
Blows stump and ash from the world's mad dying.*

*Let there be this place,
So I may come back at dawn
And the wild cherry, bending with dew,
Brush my face;
So I may know again all that I knew:
Lupine and foamflower lace,
Hermit thrush calling.
A mountain's shoulder is made for crying;
Firm under my cheek now my last night is falling.*

A Good Beginning

A HOPEFUL start has been made to furnish Canadian farm people with reliable information concerning the building of desirable types of new houses and in the remodelling of old ones. Research work in these fields is to be undertaken by the universities of Manitoba, Saskatchewan and Alberta. The money to pay for this work will be supplied jointly by the governments of the three prairie provinces and the Dominion. The federal government, through its crown company, Central Mortgage and Housing, will supply 55 per cent and each province will supply 15 per cent. The results will be pooled and the advice and publications issued will be available to the residents of the provinces concerned.

The Prairie Rural Housing Committee, composed of three representatives from each province and three from the Dominion government, appointed by the governments respectively concerned was set up early last spring. The committee outlined the problems and suggested the possible method of attack. It was realized from the beginning that whatever was furnished in the way of house plans, advice on improving of existing structures and installation of much needed conveniences would be equally needed and welcomed in any of the three prairie provinces. Nearly one-half of occupied farms of Canada lie in the four western provinces. British Columbia, with 26,372 occupied farms, has its own problems of farm housing in mind and a provincial committee has been set up to study and recommend concerning that subject.

The program is a practical one, planned so that results may come quickly. First of all there is the necessity of producing actual farm house plans with working drawings so that local construction men may be able to use them. Project No. 1, research into the planning and design of farm houses, is to be undertaken by the University of Manitoba, under the direction of Professor John A. Russell. Tied in with this will be Project No. 4, which relates to the planning of farm kitchens, for which it was asked that research home economists' services be made available. It is hoped that as this work progresses that model farm houses for demonstration and educational purposes may be constructed. These would probably be situated on university campuses. Remodelling and equipment will also be a part of this study.

Designs and plans for community centres so as

A start is made to provide advice on better housing and more conveniences for western rural families

By AMY J. ROE

to fit the needs of a rural community, Project No. 7, is to be undertaken by the University of Manitoba, which is the one university in the three prairie provinces to have a School of Architecture. This work is to be limited to the designing of actual physical structures. This is the largest individual project on the list. The need for such work to be done has become apparent as many communities have set themselves towards the establishment of auditoriums, stadiums and other types of recreational centres, during the last few years. Some of these are designed as memorials to men who gave their lives in the World War. A survey party is to visit at least ten typical towns in the prairie provinces to study plans made, existing structures and possible extensions. Talks with local officials will be held and, where necessary, sound architectural information and advice will be given.

It is not the intention of the Prairie Rural Housing Committee to duplicate work planned or now being carried on by the National Research Council, but rather to concentrate on the main problems, which are distinctly rural in character. There is no doubt but that the building of houses well suited for farm living has special problems which have been ignored or neglected in the building industry in the past. Farm people have not known where to turn for advice they needed and up to the present it has not been the task of a sufficient number of trained and experienced people to dig up the information for them. Take for example the question of water supply and sanitation. A farmer needs not only the assistance of a plumber, who is in most cases non-existent in his locality, but of a soils expert who is familiar with types of soil and drainage.

bulletins, one on comparative costs of wall construction, one on the selection of wall materials, including consideration of structural materials, insulation, vapour barriers; that research work on rammed earth, cinder concrete, insulation, vapour barriers and building papers be carried forward but not necessarily completed this year. This, listed as Project No. 2, was assigned to the University of Saskatchewan, under the direction of Dr. N. B. Hutcheon, whose Department of Engineering has been active in this field of study in the past few years.

A bulletin on the heating of the farm house is to be prepared as soon as possible under Project No. 5, undertaken by the University of Saskatchewan. It was recommended that, as soon as possible, investigation be made into problems related to the use of electric lighting appliances on the farm, considering the special needs of farms within reach of central station service and those using farm plants. This, listed as Project No. 6, was assigned to Manitoba.

Work on the actual projects has already begun, or in some instances will begin with the opening of the present university term. The total budget asked for is just under \$40,000, a modest sum compared with what has been voted to other fields of housing in Canada and considering the lateness of an approach to problems affecting the large number engaged in agriculture. As the studies progress, no doubt, the field will enlarge and it will be found desirable to permanently engage men and women of talent and experience who will find it their ambition to lend more aid to farm people towards building and making better homes on the land, in Canada.

If the farmer and the farm woman are to succeed in the future, they are likely to have to produce more per unit man and woman than at any time in the past. To be efficient, they need to have greater comfort and satisfaction from their homes, which must contain many of the modern devices for efficiency. Comforts taken for granted in the average urban home today are too often sadly lacking in the rural home.

Care of Sheets

Supplies of sheets and bed linens are still short of demand and prices for these articles today are high. For these reasons, the homemaker wants to make her present supplies last as long as possible. Suggestions for their care comes from Florence P. Day, home management specialist with North Dakota Extension Service:

Sheets wear better if they are turned part of the time so that the narrow hem is at the top of the bed. Most of the wear comes between the centre of the bed and the pillow, where it is rubbed by the shoulders of the person sleeping on it. Guard against rough places on the bedstead or exposed ends of bed springs. Mattress pads protect both sheets and mattresses.

Avoid use of strong bleaches in laundering. Too hot irons also injure the sheets, as does ironing folds down the centre of the sheet. Folds pressed down by the iron are further pressed in storage by the weight of the pile of sheets. This pressure tends to break the threads along the folds. If you are troubled by having your sheets shrink, try ironing them lengthwise instead of across. Continued ironing in one direction makes the sheet longer that way and shorter across. As sheets are hardly ever pre-shrunk, make allowance for shrinkage when buying new ones. On windy days take sheets off the line as soon as they are dry. Flapping in a stiff breeze whips out the hems. The warning is given to never use sheets as laundry bags. This puts a hard strain on a sheet and often results in snags, tears, dirt and spots.



Attractive table centres may be had by using autumn fruits, vegetables, grains and grasses.

The highly important study of developing improved methods of installing running water and sewage disposal systems for farm houses, Project No. 3, is assigned to the University of Alberta under the direction of Dean R. M. Hardy. A technical research worker in the person of T. Bouthillier, civil engineering graduate of the University of Alberta, has been engaged for this work. He will collaborate with sanitary engineering officials and engineering professors of the other provinces to avoid duplication of work and will draw upon practical work done and experience gained in this field by the Dominion Experimental Station at Swift Current.

The committee recommended that studies be undertaken leading to the early publication of two

bulletins, one on comparative costs of wall construction, one on the selection of wall materials, including consideration of structural materials, insulation, vapour barriers; that research work on rammed earth, cinder concrete, insulation, vapour barriers and building papers be carried forward but not necessarily completed this year. This, listed as Project No. 2, was assigned to the University of Saskatchewan, under the direction of Dr. N. B. Hutcheon, whose Department of Engineering has been active in this field of study in the past few years.

Take Your Time

By
Margaret M. Speechly

Fresh thinking about familiar jobs



THE busier you are, the more you need to take your time. Perhaps that sounds contradictory, but here's how it works. The more you have to get through each week, the less you can afford to scurry around; the more you need to pause for some fresh thinking once in a while.

This is especially true with those tiresome jobs which take so much out of you—like churning. Very few people really enjoy making butter because it means real toil, and consumes a lot of time. You'll find it will pay you to look at churning from every angle to see if it uses up more than a reasonable amount of your strength.

Is your equipment of the right sort? Do you know what is the best type of churn for your purpose? If you are not sure discuss this with others to find out the merits of various sorts. Ask the merchants to demonstrate their wares. Study the catalogs.

A barrel churn handles with ease a large amount of cream, but it would be a poor choice if there is not much cream. At seasons when cream is short, a glass churn is very handy and takes much less strength to operate than "shaking" a sealer or a gallon can.

Some people like a metal churn, others prefer wood. Each has its good points and drawbacks. Metal tends to rust so needs to be completely dry when put away. After a wooden churn has been idle for a few weeks it is likely to warp and therefore it pays to take the time the night before to half fill it with water. This will save delay next morning when you are all set to churn.

Carrying water in and out of the house is part of churning most people hate. Have you tried every feasible scheme for skipping this drudgery? Are you in the habit of getting up the cream yourself? Lots of women think nothing of lugging up a heavy can from the cellar or cooling tank, or of pulling it up from the well. All of us do that on oc-

casation, but are you justified in using so much precious energy each time you churn? I feel sure you could avoid that piece of drudgery by asking your good man to handle it—at the right moment of course, which is likely to be early in the morning before he goes to the field.

Having the cream on hand in good time allows it to be warmed to the right temperature. Butter simply will not "come" unless conditions are just right. It is widely believed that delays are caused by the cream not being sour enough, but souring is not essential. It affects the flavor of the butter, but not the speed of churning. Occasionally when cows have been milking for a long time or if their feed is inadequate, churning takes ages but apart from this the commonest cause of slow churning is wrong temperature.

You can save endless delays and aggravation by using a dairy thermometer. The cost is trifling and you will be pleased with the improvement in the quality of the butter. Make it a rule to stir the cream before inserting the thermometer, and take time to check the heat of the room as this has an influence on the speed with which the job gets done.

Making butter is a bit less tiresome if it is out of the way before dinner.

To do this an early start is essential and that depends on so many things—the hour of rising, the milking and the separating, the poultry and whether there are tiny children to be cared for or lunches to be packed. You may find it simplifies matters if you churn in the afternoon rather than stop half way to see to the dinner.

Have you ever considered reducing the number of churnings to be done during the year? One of my neighbors who won prizes annually at the local fair for her butter, made, each June, all she needed for family use during the rest of the year. Think of the time and energy saved week by week, not only in operating the churn but in getting out the equipment, scalding it and putting it away afterwards.

I mention this as an example of good time-management. Your conditions may not be quite the same, but are you justified in churning any oftener than is necessary, even though you like the work?

Another Heavy Job

Scheme how you may, washing clothes is one job that is hard to skip. Because of this and because of the strength it takes, you need to check your methods from time to time. Is your equipment placed so the work proceeds from one step to the next without cross-tracking? Are light and ventilation good? Working in a dark, stuffy corner greatly adds to fatigue. It may be you could get over the difficulty by having another window cut.

Is the water supply handy, or do you still lift and re-lift it each week? This amounts to tons of weight year by year. Have you sent to the university in your province for plans of simple water systems? Once there is a tap, you can attach a hose to it for filling tubs and washer. This is a grand saving of precious human strength.

THE modern trend in laundering lays emphasis on changing clothes often to avoid heavy soiling. Better to have more articles lightly soiled than fewer grimy ones, because the machine can do the work without additional rubbing.

Colored clothes for people of all ages are easier to keep looking fresh and you can do away with the bother of boiling. Men everywhere are wearing shirts of pastel colors for "best," instead of plain white which is the bane of a busy homemaker.

Paper serviettes, colored lunch cloths, and linoleum or paint on table tops, are smart and labor-saving. Then there are the new materials that need only a damp cloth to keep them fresh—plastic aprons, bibs, tablecovers, curtains and so forth.

What to do about men's towels is always a burning question. My plan has been to change them often, provide each man with a dust cloth so he can remove the loose dirt before washing, and give the towels an occasional treatment in the boiler with a dissolved washing tablet or bleach.

Stove-management on wash-day is

another thing to consider. When your mind is occupied with the washer it is so easy to let the fire go down and to suddenly find everything held up. By keeping the heat even, you can skip the tiresome business of coaxing the fire back to life, or you can avoid a flare-up which sends the boiler overboard with a rush. Besides being dangerous, who wants to wrestle with a messy range at the end of the washing?

In doing any work around the stove, refuse to be hurried. Take time to protect your hands when lifting anything hot. Use oven mitts or potholders; never a damp cloth if you wish to avoid a serious burn from steam.

When rendering fats do not allow your attention to be divided. If you

must go to the phone remove the pan entirely from the range. Always use a deep kettle and do not have it more than half full. Stir constantly with a long spoon. This is important because the pieces at the bottom cook first and unless well stirred they are likely to burn and affect the flavor of the fat.

You can save time and strength if you cut the raw fat into pieces of uniform size which will be melted at about the same time. If small and large chunks go into the pot together, some become crisp and brown before the rest. This not only keeps you at the stove longer, but it reduces the flavor and quality of the lard.

Take time to wipe up immediately even a small spot of grease on the stove. Keep a pail of earth or sand for smothering a blaze. Never throw water on blazing fat because this causes it to spread. Do not neglect even a small spot of fat on the floor as it is so easy to slip on it and break a leg.



Good Helpers

You can't afford to be without these standbys

ONE tool I'd hate to be without is a dairy thermometer. In fact I like to have a couple so if one breaks, I'm not left in the lurch. The very next time I'm invited to a shower for a farm bride, my contribution is going to be a dairy thermometer plus suggestions for its use.

This handy device does away with uncertainty and indecision—no more wondering whether the cream is warm enough, or whether to start churning before dinner. Once you have become accustomed to these advantages you will never go back to feeling the cream can with the palm of your hand. Hit-and-miss methods vary with the season, the weather or how you happen to be feeling. Your hand may be hot one day and cool the next.

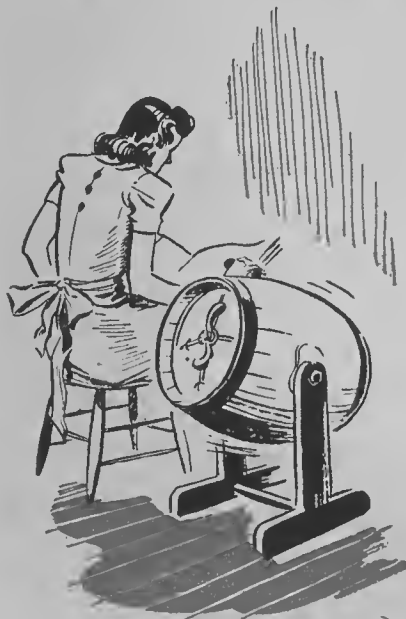
Treat your helper kindly and it will last a long time. Naturally it will not stand rough handling or being plunged from cold liquid into hot. Warm it

gradually and you will have no trouble. Keep it in a safe place in its own container. The cost is trifling compared with the energy it saves.

Away With Guesswork

Before inserting the thermometer in the cream, glance at it to check on the warmth of the air in the kitchen or the milkhouse, as this has a bearing on how warm the cream should be. Under ideal conditions 62 degrees as marked on the thermometer is the right temperature for churning. In hot weather you may prefer 60 degrees. If you have to churn in the kitchen, keep the fire low. Before testing the cream, stir it well and then allow plenty of time for the mercury to register.

If you go in for cheese-making, use the thermometer every time and you will produce better flavor and quality than ever before. When you wish to pasteurize milk or cream for home con-



sumption, the thermometer acts as a guide. Pour the milk into the double boiler and raise the heat to 144 degrees, stirring before inserting the thermometer. Do not let the tip rest on the bottom of the pan as this is the hottest spot. Hold the milk at 144 degrees for 30 minutes and chill as rapidly as possible.

You may not churn regularly but the chances are you bake bread every week. Here again the dairy thermometer is a saving. For yeast to grow it must have warmth, but not too much. Once the heat goes above 85 degrees there is a chance that other organisms or "weeds" will start to grow and produce sourness.

As a safeguard you can test the liquids and the flour and the finished dough as well. If the weather suddenly changes you can find out if the dough is affected, by inserting the thermometer.

Another standby for every farm home is a clinical thermometer. Lots of people rely on a neighbor who has one, but that is not good enough. In the middle of the night, or if you are far from a doctor, it is reassuring to be able to note variations in a patient's progress. Further, a thermometer settles whether a person is really ill or just out-of-sorts.



Children sometimes complain about feeling sick when it may just be a case of panic at the thought of exams or of taking part in a concert. The thermometer will help you to decide what line to take. If you phone the doctor to report or ask advice, always take the temperature before putting in the call. Keep a record of the normal temperature of each person in the house, as some people habitually register slightly above or below normal.

In this climate there are times when even a healthy person is glad of the comfort afforded by a hot water bottle.

I find it pays to have two. You have probably noticed that a person with a bad back or a pain in the middle, often has chilly feet as well. Of course the pioneers managed without a rubber bottle by heating a brick, or a bag of salt or a sealer of water, but somehow those aren't so cosy for the patient.

Another thing that should be in every farm home is a bed-pan. Since the

earliest days anybody who owned one gladly lent it, but is that good enough? Suppose two families have illness at the same time, what then? More than ever, when nursing help is non-existent, every farm family ought to be equipped with essentials.—M. M. S.

The Handy Thermos

Getting full use from your vacuum flask

WHOEVER invented the thermos bottle really deserves a monument. Think of the millions of lunch-carriers who would be minus a hot drink, and the countless school children who would be deprived of their noon cocoa if it were not for the handy vacuum bottle.

Add to the above the men on tractors for whom a drink of tea or fruit juice is a life-saver. For sending out to the field I like to have at least two—one for tea and one for coffee. The large vacuum jugs are grand for picnics and motoring.

In buying, select the sturdiest, preferably with a large opening which makes it easier to clean. The plastic screw-tops are nicer to drink from than the old metal types—easier to hold too. I have used many thermos flasks and found that an old-timer with a corrugated metal exterior has outlasted them all and has withstood the racket of the tractor season after season.

Glass linings can be replaced but the difference between the cost of a re-fill and a new bottle is not very great. If you do replace the glass be sure to follow the maker's directions carefully and see that there is no chance for moisture to seep in.

Never pour hot liquid into a cold flask. Warm it gradually with hot water and you won't have any trouble with cracking. Similarly don't put ice cold drinks into a heated flask. If the flask is going out to the field, it is well worth while wrapping it in some protective packing.

As soon as possible after using, rinse the thermos and wash in warm, soapy water, then give a final rinse and dry thoroughly. Leave it open until needed again, in order to avoid mustiness. If the men come in late at night when there is no opportunity to wash the

flask, fill it with water rather than leave it closed.

Be just as particular about the corks. I buy several corks and use them in rotation. To keep the cork in good condition, I cover it with parchment paper before inserting it. Special papers are sold for this purpose, or butter paper can be cut into suitable pieces. This helps to prevent the cork from absorbing liquids or flavors, but is not a substitute for careful washing and airing.

On Sundays or other times when the thermos is resting I fill it with water after washing and add half a teaspoon of baking soda. Occasionally I rub the inside of the flask with soda.

Are you getting full use from this dandy helper, or does it sit on the shelf for most of the year? When there is sickness, fill it with hot water last thing at night and you will be able to re-fill the rubber bottle without starting up the stove.

In hot weather when you wish to let out the fire, make up a thermos of hot or cold beverage for the middle of the afternoon. When you must be absent for several hours, leave a thermos of tea for friend husband if he likes his afternoon lunch.

In cold weather, people coming in very late or from meeting a train in the middle of the night, usually appreciate a hot drink. To save getting up at an unearthly hour, I leave ready a couple of thermos flasks to "warm the cockles of their hearts." If you know someone in the hospital who likes a good cup of tea made with farm cream, take a thermos with you when you go to visit and just watch the eyes brighten.

A parting caution—do not use the thermos for keeping the baby's feeding warm. There is a risk of the milk going sour.—M. M. S.

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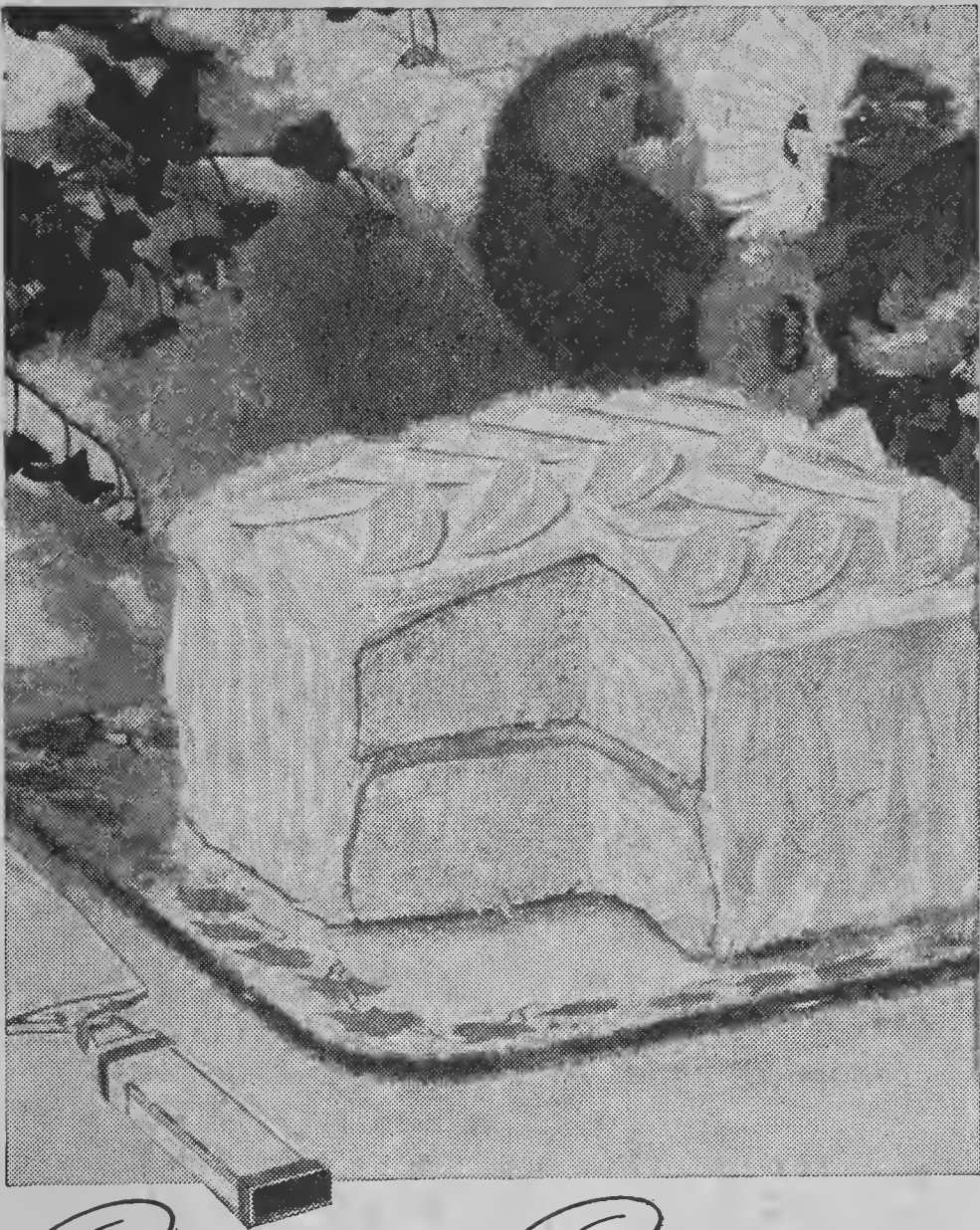


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BANANA-ORANGE CAKE

- | | |
|----------------------------------|------------------------|
| ½ cup shortening | ½ tsp. salt |
| 1 cup sugar | ¾ cup milk |
| 2 eggs | 1 tsp. vanilla extract |
| 1¾ cups sifted all-purpose flour | Orange filling |
| 3 tps. Magic Baking Powder | Orange frosting |
| | Banana slices |

Cream together shortening and sugar. Add eggs, one at a time, beating after each. Sift together flour, baking powder and salt; and add alternately with milk to creamed mixture. Add vanilla extract. Pour into two greased 8-inch square layer pans. Bake in moderately hot oven, 375°F., 25 min.

Cool 5 min. Remove from pans; cool on wire rack. Spread orange filling on bottom layer; place orange sections on filling. Place top layer on filling; cover with orange frosting. Garnish with orange sections and banana slices.

ORANGE FROSTING: Combine 2 egg whites, 1 cup light corn syrup, and ¼ tsp. salt; place over boiling water. Beat with rotary beater about 7 minutes or until frosting holds shape. Add 1 tbs. grated orange rind. Tint orange with orange vegetable coloring.

ORANGE FILLING: Mix ½ cup sugar, 3 tbs. flour, and ¼ tsp. salt; add ½ cup water. Beat 2 egg yolks; add. Add ½ cup orange and 1 tbs. lemon juices. Cook over boiling water, stirring constantly, until thickened. Cover; cook 5 min. Add 1 tsp. grated orange rind. Cool.

In order to prevent banana slices from darkening, they should be either dipped in orange juice or else put on just before the cake is served.



Jams, Jellies and Marmalades

Delicious items to add full-flavored richness to cold weather meals

By MARION R. McKEE

WITH a wide variety of berries, fruits, and vegetables ripe and ready for use, the time for making jams, jellies and marmalades is here.

Jellies and jams use large quantities of sugar, which is still on the scarce list. By choosing recipes which use comparatively smaller quantities of this precious sweetener, the sugar supply may be stretched. Some recipes which use corn syrup or honey may be substituted for those just using sugar, and the slightly different flavor they add is very appealing.

In making these preserves select clean, sound fruit, including some slightly under-ripe ones. Over-ripe fruit hasn't enough pectin to make a good jelly, or jam with a jelly-like consistency, unless commercial pectin is used along with the fruit. Full directions and recipes are given along with a commercial pectin. One of its advantages is the larger amount of jelly made from the same amount of fruit juice compared with boiling the juice down to concentrate the natural pectin. However the boiled down juice has a fuller, richer flavor and is preferred by some.

For a sparkling clear jelly the juice is strained overnight or for several hours through a moist jelly bag. If the bag is not squeezed the jelly will be clearer, but squeezing the pulp increases the quantity of the jelly and gives a fuller flavor.

Unless extra pectin is added to the juice it is necessary to give a pectin test for jelling. A good test is to measure one tablespoon of the fruit juice and one tablespoon of rubbing or any alcohol into a small dish. Blend the two together quickly and let stand a minute. If a jelly-like mass is formed the juice contains enough pectin. Do not taste the jelly formed in this test as rubbing alcohol is poisonous.

If paraffin is going to be used for sealing the jars it should be kept as hot as possible over hot water. When the jars are filled and cooled pour a thin layer of melted paraffin wax over the surface and allow it to harden. When hard pour a second layer of wax over the first, rotating the jar so it will stick to the sides and give a perfect seal. Cover the jar with paper or a metal top to keep the contents clean.

Black Currant Jelly

- | | |
|--|--------------------------------------|
| 2 qts (2 lbs.) black currants (prepared) | 2 c. juice from overnight extraction |
| 1 c. water | 1½ c. sugar |
| | ½ c. corn syrup |

To prepare currants, remove tips and tails, reject unsound fruit, and wash gently in a colander. Weigh or measure and place in a large saucepan with water, crushing fruit with a potato masher. Bring to a boil, and boil eight to 10 minutes, or until juice is flowing freely. Drain overnight in a moistened jelly-bag or double cheesecloth. Measure the juice and then add the sugar and corn syrup. Heat all together, and

quickly bring to boiling point, stirring only until sugar is dissolved. Boil rapidly until jelly stage is reached—when two drops "sheet together and drop reluctantly" from the side of a large spoon—about eight to 10 minutes. Allow hot syrup to stand in kettle while arranging hot, sterilized glasses on a tray. Remove scum from syrup, then pour quickly into the glasses to within one-quarter of an inch from top. Seal and let stand without disturbing till set. Yields about one and a half pints.

Raspberry Jam

- | | |
|---|---------------------|
| 2 lbs. prepared raspberries (3 to 4 pint boxes) | ¾ lb. sugar (1½ c.) |
| | 1 c. corn syrup |

Pick over berries and wash. Combine fruit with sugar and syrup in kettle and allow to stand one hour. Stir the mixture over heat until sugar dissolves and mixture comes to a boil. Boil rapidly, stirring frequently, for 20 minutes or until thick and clear. When the jelly stage is reached, remove kettle and cool slightly. Fill hot sterilized glasses to within one-quarter inch of top. Seal, cool and label, and store in a dry, cool dark place. Yields about two pints.

Red Currant Jam

- | | |
|-------------------------------------|-----------------|
| 8 c. prepared red currants (2 lbs.) | 2 c. corn syrup |
| 3 c. sugar | ½ c. water |

Carefully wash and stem currants, rejecting any spoiled portions. Measure sugar, corn syrup and water, place in a large saucepan, bring to boil and boil five minutes. Measure or weigh prepared currants and add to syrup on stove. Bring again to a boil and boil for five to 10 minutes or until currants are tender, stirring frequently. Then skim the currants out and put them in hot sterilized jars (about two-thirds full). Continue boiling syrup on stove about 10 minutes longer or until thick and jelly-like, then pour over currants in jars. Seal. Yields about two and a half pints.

Tomato Marmalade

- | | |
|------------------------|---------------|
| 3 lbs. tomatoes (ripe) | 4 c. sugar |
| 3 lemons | ½ lb. raisins |

Cut tomatoes into small chunks and put them in a granite kettle with sugar and raisins. Boil until thick, adding lemon juice 10 minutes before removing from fire. If desired, remove the thin, yellow rind of the lemons with a sharp paring knife, chop it finely and add to the tomatoes at the beginning.



Label the jars carefully and keep a record of their contents.

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Tasty Pickles

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LET a well stocked pickle shelf help bring variety and flavor to the year around meals. Extra odds and ends of vegetables and fruits in the garden at this season may be made into various delicious pickles and relishes to grace the table later on.

This year as in previous years, sugar sparing recipes will be the most desired. Sour pickles will still be on the pickle shelves with some sweet ones to help add variety.

In making pickles using good quality vinegar, fresh spices, ordinary cooking salt instead of the "free-running" variety, and fruits or vegetables which are at the best stage of "ripeness" will help insure success.

Sweet Cucumber Relish

3 large cucumbers	1/2 tsp. cinnamon
3 medium onions	1/2 tsp. mustard
1 c. cider vinegar	1/2 c. chopped pre-
1/2 c. brown sugar	served ginger
1/2 c. salt	

Put cucumbers and onions through a food chopper. Mix with salt. Cover and let stand overnight. Drain well. Cook ten minutes. Bottle while hot.

Spiced Carrots

1 qt. carrots	1 T. whole cloves
3/4 c. sugar	1 stick cinnamon
2 c. vinegar	1 1/2 tsp. salt

Wash and scrape carrots. Slice or leave whole, depending on size. Make a syrup of the other ingredients. Cook the carrots in the syrup until tender. Pack in hot sterilized jars.

Pickled Pears

2 lbs. pears	1 1/2 c. sugar
1 c. vinegar	2 T. stick cinnamon
2 c. water	1 T. whole cloves

Select ripe, firm fruit. Peel, cut into quarters, and core the pears. (If desired small pears may be left whole). To prevent discoloration, drop the fruit as it is peeled into a salt solution made by dissolving one tablespoon of salt in each quart of water. Mix vinegar, water, sugar, and spices. Boil this for five minutes. Add the drained pears and simmer the mixture until the pears are tender. Pack the fruit into clean, sterile, hot jars. Cover the fruit with the boiling syrup, and seal the jars.

Green Tomato Pickle

1 gallon green tomatoes	1 T. whole allspice
1 1/2 c. brown sugar	1 T. celery seed
6 large onions	1 T. whole cloves
2 sweet red peppers	1 tsp. whole black pepper
4 c. vinegar	1 T. mustard
1 T. mustard seed	1/2 c. salt

Slice tomatoes and onions thinly. Sprinkle with 1/2 c. salt. Let stand overnight in a crock or enamel vessel. Tie all spices in a cheesecloth bag. Chop pepper pods very thinly. Drain the tomatoes and onions well. Add the sugar, mustard, seasonings, and peppers to the vinegar, then add the tomato and onion. Cook for 1/2 hour, stirring occasionally to prevent burning. Remove spice bag. Pack into hot sterilized jars and seal immediately. Yield, about four pints.

Spiced Celery

6 bunches celery	1 tsp. mustard
15 tomatoes	1 tsp. cloves
1 red pepper	1 tsp. allspice
2 c. sugar	1 tsp. cinnamon
2 T. salt	1 tsp. celery seed
1 1/2 c. vinegar	

Cut off roots and leaves of celery, separate stalks, and chop. Wipe, peel, and chop tomatoes. Wipe and chop pepper. Mix dry ingredients and add vinegar. Combine mixtures, put in the preserving kettle, bring to boiling point, and simmer 1 1/2 hours. Fill jars to overflow and adjust covers.

Tomato Catsup

8 qts. ripe tomatoes	1 T. mace
1/4 c. salt	1 T. celery seed
2 c. sugar	2 T. cinnamon
1 T. cayenne	2 qts. vinegar

Cut tomatoes in pieces, add other ingredients, and cook slowly until reduced 1/2 (about 2 hours). Strain, heat and seal. If desired add 6 cloves garlic with spices.



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A Beauty Quiz

Questions and answers to many beauty problems are discussed

By LORETTA MILLER

THERE is a solution to every beauty problem!

Whether the individual is troubled with unattractive skin or unruly hair, bad posture or a weight problem, chapped hands or scant lashes, there is a way to better looks. The path may not be an altogether easy one, and may require many hours of work stretched over a period of many months, but the sincere girl will be successful.

Here are a few of the most frequently asked questions. Perhaps the solution to your problem is here:

Question: In your opinion, what is the best cleanser for the skin? Soap and water or cleansing cream?

Answer: Nine times out of ten soap and water is the better cleanser, regardless of the type or texture of the skin. The regular use of a coarse textured washcloth or complexion brush, well lathered and scrubbed over the face, will make or keep the complexion in the pink of condition. If the skin is extremely dry, however, follow the cleansing with a light application of lubricating cream or oil. Skin that rebels against the soap and water washings should be given special cleansings with a light cream. When soap is used, it is necessary that every trace of it is rinsed from the skin before drying it with a towel.

Question: My lashes are not very long. How can I make them look longer? How can I make them curl upward?

Answer: Brush petroleum jelly upward over the lashes every day. This will aid in stimulating the growth of the little lashes and will tend to curl them upward. Eyelash curlers, not one tenth as silly as one thinks, will train the lashes to curl up, and so make them appear heavier. Eyelash curlers may be purchased in drug stores.

Question: How is it possible to know when all soap or shampoo has been rinsed from the hair and scalp?

Answer: After rinsing the hair with several changes of clear water, rub a strand of wet hair between your fingers. If a squeaking noise occurs, it means that the hair is thoroughly rinsed. But if the hair feels sticky, more rinsing is necessary.

Question: Can one ever, ever get rid of rough skin on the upper arms and thighs?

Answer: Scrubbing vigorously over the rough skin with a stiff brush, well lathered, will work wonders. All soap should be rinsed from the skin, then a coarse-textured bath towel rubbed firmly over the rough regions. The scrubbing and rubbing stirs up circulation and so aids in making the skin smooth. Liberal applications of hand lotion massaged over the rough areas after each scrubbing will hasten the corrective.

Question: What can be done to improve the appearance of the hair? How can falling hair be prevented? What can be done about dry, split ends?

Answer: Daily brushing with a stiff



A small amount of brilliantine will keep hair looking its best.

bristled brush is probably the finest corrective for all types of hair and scalp problems. Brushing stirs up circulation and so normalizes the action of the oil ducts. (Slowing down too active ducts and speeding up those which are under-active.) The brush must be clean and the brushing should continue for at least 100 strokes each day. If the scalp is either too oily or too dry, use a scrubbing motion over the entire scalp, but covering only a small area at one time. Brushing gives the hair lustre and makes it easier to handle. Clip off split, broken ends every month or two. Unless the hair is falling at an alarming rate, there is no need for worry, as one generally loses more hair in the spring and fall than any other time. This is natural and simply means that old hair is falling out to make room for the new growth. The occasional use of a very mild sulphur ointment applied only to the scalp will benefit the health of the scalp and ultimately the beauty of the hair.

Question: What type of rouge should be used on the cheeks in order to give a natural effect and how should the application be made?

Answer: A cream rouge of light texture, well applied, will give the complexion a fresh, natural rosiness. First apply a dab of the coloring over the most flattering area of the cheek, then use the cushions of your fingers for smoothing over and over it. To find the most becoming spot, experiment by first putting the color high on the cheeks. Remove the rouge and try placing it lower. Study each application carefully. In any event, only a very light application should be used and it must be blended thoroughly. Powder is put on over rouge.

Question: How can I have prettier hands? They are always red and rough and very unattractive.

Answer: Follow every cleansing with a good scrubbing and massage. Use a liberal application of lotion for massaging over and over the hands. And every time you have had your hands in water for any length of time, either washing or doing the dishes, rinse off the hands and massage over them a good hand lotion. As a special and occasional treatment for the hands, do this at night before going to bed: Scrub with soap and water and rinse and dry well. Then cover with a heavy coating of lubricating cream, massage for a minute or two. Then slip on a pair of loose fitting cotton gloves. Keep the gloves on until morning. They will prevent the cream from rubbing off onto the bedding.

FRONT-PAGE FARM NEWS!

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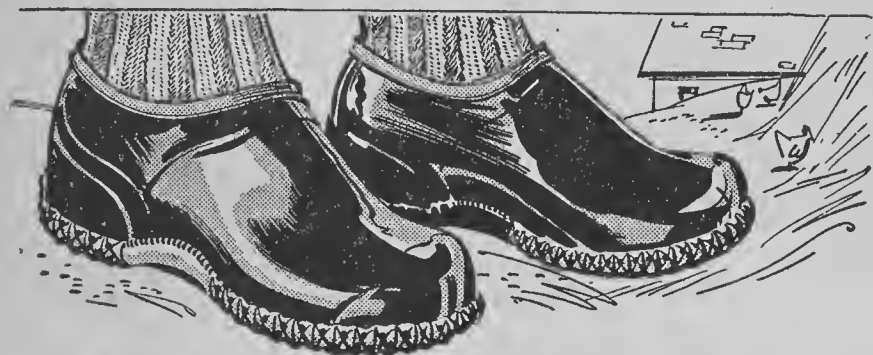
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294-S-46

In England Now

Summer brings the first Royal Show in seven years—holidays at the seaside—and in the fenlands, ripening corn

By JOAN M. FAWCETT

Thursday, July 3rd, 1947.—Up against the summer sky the great cathedral upon its hill was a pale, spired silhouette, a background of great beauty; at its feet, thrown into brave contrast many colored flags fluttered gaily above white roofs—so might they have fluttered when knights rode out to battle in the lists. Here, one felt as one saw it with a start of pleasure, was surely gathered the chivalry and pomp of the Middle Ages. But in prosaic reality, we were creeping along in a queue of cars and buses, making our way to the Royal Agricultural Show that was being held on the race course at Lincoln. It is the first Royal Show to be held since the war, and so we felt ourselves lucky that it was being held here, only a few miles from our home. Except in times of war, it is held each summer, but place varies from year to year. It has always been a popular spectacle for country people—farmers, horse breeders and horticulturists—but this year it has attracted crowds from all the nearby towns. Every day of the week the crowds grow bigger, breaking every record for all time.

As we were taking the children, we had decided not to go on the Wednesday, as the King and Queen were going that day and we imagined the crowd would be at its worst. Actually, we were wrong. Wednesday was a wet day and today was fine, and the crowd bigger than ever. The Duke and Duchess of Gloucester went today—but except for the glimpse of a large car creeping through the crowd, we did not see them. As the day went on, it became quite an achievement to see anything except other people's backs and hot faces.

Immediately inside the entrance were the lanes of agricultural machinery—tractors, balers, milking machines, drills, ploughs, hay lifters—everything working, a constantly moving, clanking, gleaming red and blue inferno of the mechanized age. Between these miles of stands, wooden sleepers had been put down to form roads and upon these roads moved the wide-eyed throng of people, many thousands of whom understood nothing of what they were seeing, but were satisfying an unacknowledged hunger for the sight of something new and colorful, something exciting and different. After seven years of what one might call "show starvation," the people of England will now go to see anything, anywhere, and in any weather. Nobody can understand why there is this hunger for a spectacle but every race-meeting, every village fete draws a record attendance.

We parked the two children with their faithful Nannie beside the show ring. All they wanted to see was the horses, in this mechanical age. Machines are out of favor with the children. While they watched, we did the rounds of the stands. We wanted to buy a small tractor for cultivating our market garden and a seed drill for the same purpose. There were quite a few to choose from—all well made, attractive looking jobs, but when we enquired the date for delivery, we found the expected snag. No one could promise anything better than six months for a tractor, which meant a whole season's ploughing lost, and an indefinite unpredictable period for a drill, depending on American imports. As for a new shookey-brake, which we saw and longed for—three years! It was the usual story, so much of our best goods are taken for exports that the home market is constantly in an acute state of shortage. It becomes wearisome, even when we know it is necessary to right our cur-

rency and so our future. It already seems to have lasted for so long.

Having walked ourselves dusty and hot, we left the clanking, glittering lanes and joined the children for a picnic lunch. They had been lucky and got ringside seats and were delightedly watching the hackneys stepping lightly over the grass, past the banks of hydrangeas and the white jumps set up for a later class. The judges in their bowler hats and riding breeches, moved leisurely about from one entry to another; the white-roofed stand was filling up; lovely hunters were being ridden in by ladies in side-saddle habits and silk hats. You felt that here, if nowhere else, England was moving back into her old ways. It was a way of living that we all loved—a way of living that was composed of a love of horses and fields and woods, of growing crops and sport, of ancient buildings and an ancient faith that inspired them, a faith without sentimentality, that we do not mention.

The cattle lumbered round the ring sedately until a Highland calf escaped and ran among the bulls. Most people laughed, some wondered if there would be a stampede among the hydrangeas, but finally all was well and the little episode was just one more excitement for the children to remember on their way home. After we had eaten, we made for the flower tent, to find a queue to get in quite a quarter of a mile long. It was disappointing, but in the end we were lucky and were given "a pass in" that saved us from a weary wait. I sniffed the air inside the tent with appreciation. I had forgotten what the inside of a flower tent smelt like—the scent that is a mixture of roses and carnations and crushed grass and hot canvas. About us, on every side, were the tall blue spires of delphiniums, the mixed colors of the tallest carnations and the strangely weird shapes of orchids. Even if the newest delphiniums were priced at 30 shillings a plant, it was satisfying to see them again.

Thursday, July 31st, 1947.—I am writing this from the seaside, where I have gone to spend a fortnight with the children in a caravan. But this morning I left them with Nannie and the sea and the sand, and went by train across the fens of eastern England to spend a day at the old house where my grandfather lived and where I spent so many magic weeks as a child. No days since have been so wonderful, for it is a child's dream house. It is a large stone house built in the shape of an L with perfectly genuine battlements and a turret with tiny windows and a winding stair. It stands at the head of sloping lawns that sweep down to a lake and old trees and beyond there is the park with the inevitable rabbits and sheep cropping peacefully in the sunshine.

My cousin and I went up onto the roof after lunch. We took cushions and a bottle of oil and sunbathed, and as I lay in that great quietness and looked out over the old crooked roofs and touched the old, mossy stones, I knew that the place had lost none of its fascination for me. Jackdaws clattered in the elms and a gardener pushed a barrow of weeds across the lawn below and disappeared down the garden path to the kitchen garden. Some parts of this house have stood here for the last 600 years, and I found it a great comfort to feel how untouched it was by the pettiness of the people who had lived in it. It was mentioned in Domesday Book; it will still be here, as serene and lovely, in another two or three

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hundred years. I love it and through it I love all that is best of England. It was like the flags fluttering on that day, when we approached Lincoln and saw them against the silhouette of the cathedral. These things are England at her most personal best, an England that is above politicians, rationing and shortages—an England that means something so infinitely greater.

As I came back to the seaside again this evening across the fens, I looked out over another age-old aspect of this old country, the farms and fields of its east side that for generations have been growing our best potatoes and wheat. The first corn was being cut and the stooks lay, casting shadows on the close stubble in the evening light. This was the low-lying land that was so badly flooded in the winter, and the crops of grain are not good in consequence. It is completely flat land, like Holland, divided up by "drains" and dykes. At Boston I saw the great tower of the parish church, built many centuries ago by the Dutch cloth merchants who had settled in the district when

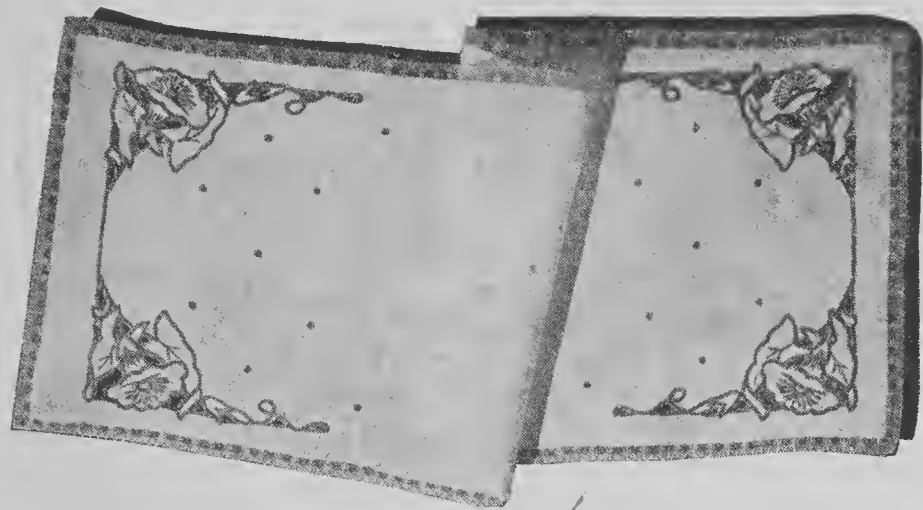
England was the world's greatest exporter of wool and more than half its population was engaged in the trade. Near another small station, named unromantically, Counter Drain, workmen were busy constructing a great earth bank that followed the winding course of what looked now to be a harmless river. As far as I could see this shape of newly turned earth lay across the fields, a protection against the angry, eating waters of the winter, that we hope so much will not be as bad as last year.

The train was full of Scouts of all nations, bound finally, I suppose, for the International Jamboree in Paris. As they moved up and down the corridor in search of cups of coffee, I caught snatches of Austrian and Dutch, Norwegian and Danish. They were all eager and brilliant with vitality and happiness like the ripe corn and the glittering water beyond the window and I thought how improbable war seemed when you looked at them . . . as improbable as those winter floods that it is now hard to visualize.

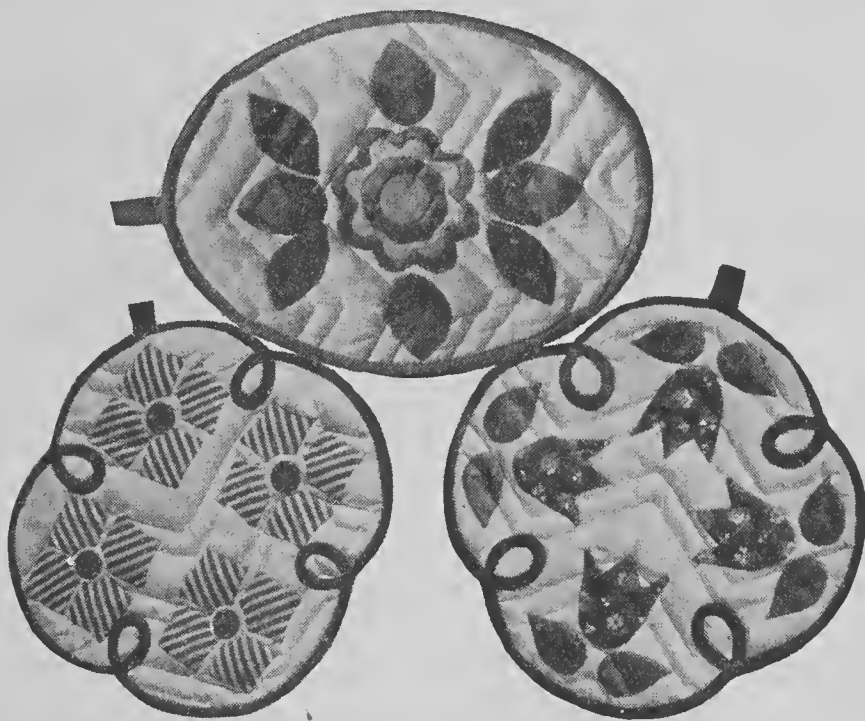
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By ANNA DeBELLE



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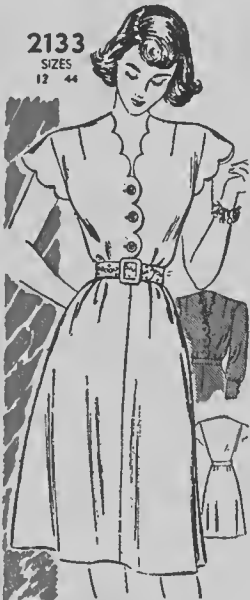
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2133
SIZES
12 - 44



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Summer Holiday Camp

Community life conference provides an interesting and pleasant outing for rural Albertans

By JAMES R. McFALL

THE way of providing a holiday, combining plenty of good fun, wholesome activity and intellectual stimulation has been found in Alberta. It comes through the means of a summer conference camp at a nearby lake resort. Such holidays for farm families and their friends from nearby towns are arranged during the season when it is possible to leave farm work for a short period, usually about mid-July.

These events, planned under the auspices of the University Extension Service, have grown in popularity and attract an ever-increasing enrollment. Gradually a permanent campsite has been built up as people come to learn of the value of getting away for a week of rest and holiday. The Gooseberry Lake Community Life Conference, held during the third week of July this year, affords just such an opportunity. Gooseberry Lake, nestled in the midst of rolling hills some eight miles north of Consort, in central-western Alberta, is typical of many lakes to be found scattered across the prairies. It has a good tree growth on the north shore and the surrounding area is dotted by small bluffs. There is an ample supply of good spring water.

Local people have established a dance pavilion, a few concession stands and built a number of summer cottages. Recently two army huts were purchased and moved in to provide a mess hall and sleeping quarters.

The annual Gooseberry Lake Summer Conference is sponsored by a local committee, assisted by the University of Alberta Extension staff. This year Mr. A. S. R. Tweedie, Assistant professor of Extension, and S. O. Hillerud, Agricultural Secretary, Department of Extension, were in charge and assisted with the program.

A special junior camp was also held in conjunction with the general conference. This was organized and supervised by Doug Thornton, Director of Education of the U.F.A. Co-op. He was assisted by Larry Proudfoot, Assistant Director.

The junior program consisted of hikes, nature study classes, public speaking, moving pictures, volley ball and swimming. Miss Wilma White assisted with swimming instruction. Then, of course, the occasional hour of dancing was worked into the evening programs.

The general conference sessions included programs for women as well as men. Miss Priscilla Mewha, District Home Economist, Stettler, gave lectures and demonstrations on "New Textiles," "The House that Saves Steps," and handicrafts.

That section of the program which was of interest to all those attending included talks by D. B. Scott, University of Alberta, dealing with the Atomic Age and Atomic Energy—Blessing or Curse? S. O. Hillerud discussed "The Farm Community of Tomorrow." George Church, President of the U.F.A., gave an address entitled, "The Farmer in World Affairs;" while the secretary of the Alberta Federation of Agriculture chose as his topic, "The Federation of Agriculture and the Rest of Us." In addition, Professor E. H. Strickland, University of Alberta, conducted organized hikes for the study of insects, as well as giving interesting talks on insects affecting the farmer's crops. On the Sunday afternoon, Mr. Tweedie closed the conference with an inspiring address.

Thus, the residents of Consort and



Upper (from left to right) backrow: S. O. Hillerud, A. S. R. Tweedie, Doug Thornton. Front row: Larry Proudfoot, Wilma White, Mrs. D. Thornton. Lower shows the local committee group.

the surrounding district have had the opportunity to take part in a constructive and interesting program. It was a program designed to help with local problems as well as to bring the members up to date on topics of national and world interest.

THIS type of program is available to any district wishing to avail itself of the privilege. The first requirement for such a holiday-conference camp is a suitable site. The next is a little initiative on the part of the local organizing committee. Local people are in charge of arrangements and may draw freely upon assistance offered for recreation and program.

The University Extension Service helps arrange the program and provides speakers. The Committee for Co-operative Education, which is financed by all the major co-operatives in the province, assists with the financing. What the Gooseberry Lake district has done, other areas could easily do. As its fame spreads no doubt others will follow the example. Leaders of local groups should become acquainted with this summer holiday-conference idea. Certainly the people of Consort are to be commended for their initiative and foresight in sponsoring such a worthwhile project for the enjoyment of their own people.

Overhanging eaves and deep porches are light thieves as far as the rooms they adjoin are concerned. Such shadowing can be cut to a minimum by painting the under sides of the eaves or the ceiling of the porch a light color.

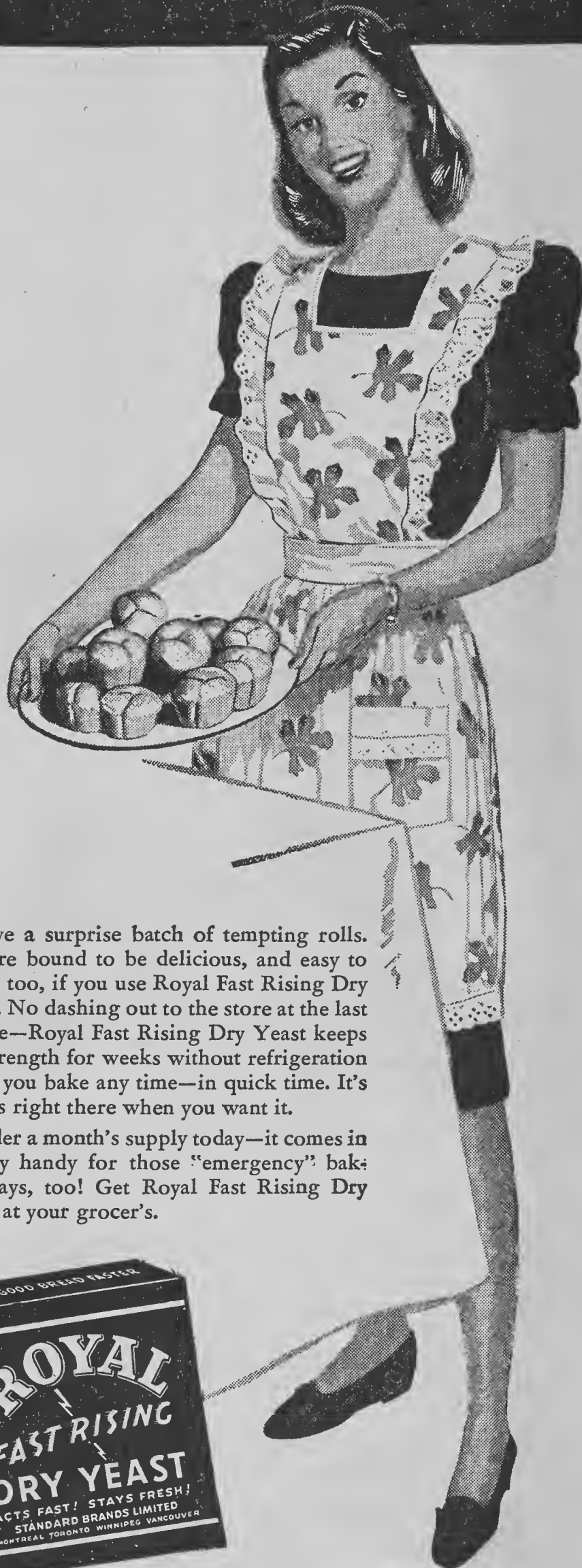
* * *

If your house looks too high for its length, try painting the roof a darker color than the side walls. Dark roofs always seem to sink lower to the ground. If the house looks too low, paint the roof a lighter color than the side walls.

* * *

Wall paper may be easily removed if it is first wet with water to which alum has been added. Let dry before taking off and use as much alum as water will dissolve.—Mrs. C. W. K., B.C.

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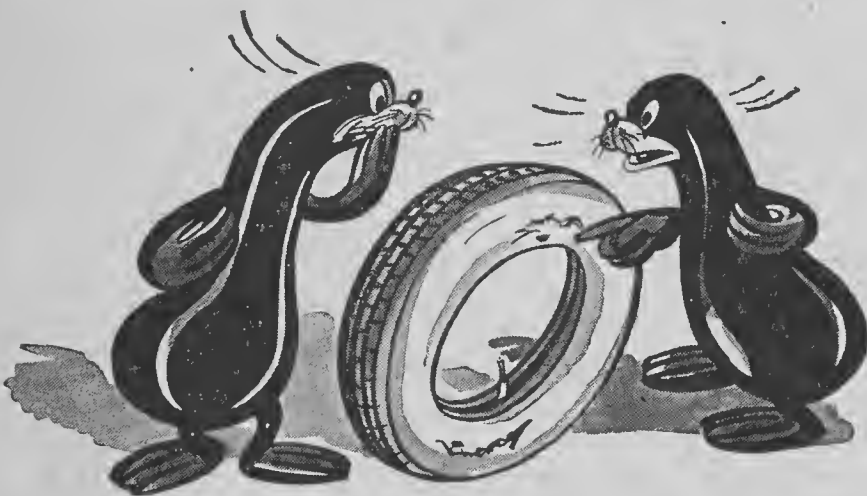
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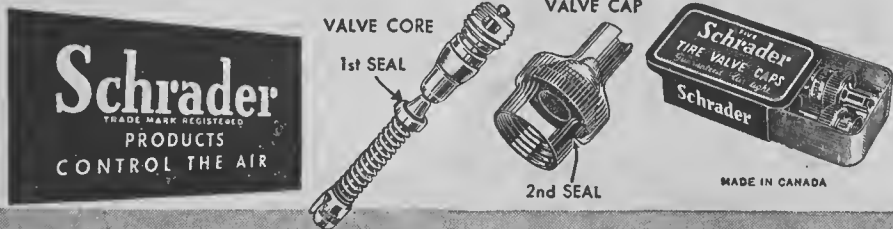
{ Bill Lindsay }

The above tire was murdered by lack of air! Yet the life of the tire could have been saved, if it had proper air pressure at all times—for underinflation ruins tires quickly. Don't murder your tires. Own your own tire pressure gauge. Use it often. It tells the exact pressure any time, anywhere. It tells you how

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LONGSHOT
LASSITER

Continued from page 7

the cutting face of the 18-inch blades of one-inch steel he has bolted projecting lugs at eight-inch intervals. Each sharpened lug acts as a saw tooth, and the larger trees are literally sawed off by irresistible power.

People will not work at physical labor any more. That is a maxim which governs Lassiter's organizing. Every operation must be mechanical to be economical. Now, after his ten brush cutters have been over a piece of land its surface is littered with debris which the government wants piled as a fuel supply for expected settlers. So the piler comes into employment. A piler is nothing more than an 18-foot buck rake on a number of eight-inch steel skids which provide for clearance of soil and small trash underneath. Much

through this storm in California and won out. He is sure he can repeat in the Peace. I asked W. S. Scarth about it. Scarth was district agriculturist in this area for many years. He isn't afraid of Lassiter's deep plowing. He feels that excessively shallow plowing has become an indefensible fetish with many northern farmers and they are beginning to reap the consequences.

Others criticize the tendency of these thick sods to remain on edge instead of being completely inverted as in shallow sod plowing. This feature is, however, looked after by Lassiter's next operation after plowing. He floats his breaking three times with a drag of 12-inch spruce logs. The first operation is done with the float at an angle and the outfit travelling in the direction of the original plowing. The next two floatings are at other angles, all designed to complete the inversion of the sods and to leave a smooth surface.

Fall work consists of working down the scrubbed land with tiller combines. There are four outfits on the project identical with the one which made the seeding record at Lethbridge earlier in



Many million gallons of water are impounded by this earth dam which O. B. Lassiter threw across the Burnt River.

of the piling has been done with six of these machines working abreast and pushing up to 100 tons ahead of them, depositing it in windrows two to the half mile. Piling, says O. B., is more expensive an operation than plowing.

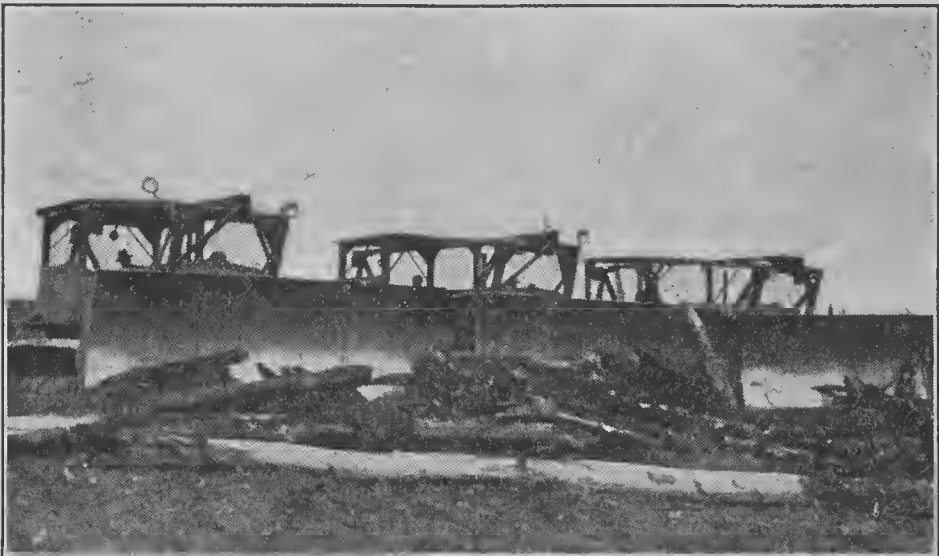
BRUSH cutting and piling involve so much work that land clearing is a year round operation on the Lassiter project, although the summer gang, sometimes numbering 50 men, tends to get half that size in cold weather. Throughout the whole of last winter work went on 24 hours a day, regardless of temperature or snow conditions. Winter farming north of 55!

There is no lack of critics of Lassiter's methods. Plenty of them are horrified at the idea of 12-inch plowing. One of them rose in the legislature at Edmonton and called on the government to put a stop to soil destruction on such a vast scale. O. B. went

the year, referred to previously in this article. Seeding is done with the same outfits in the spring.

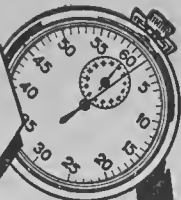
Nobody knows more than O. B. about reducing implement overhead costs. At Lethbridge he grows grain with only two implements — the tiller-combine and the combine-harvester, plus the necessary traction, of course. At Wanhams he has already spent \$350,000 on implements and will double that amount as soon as he can get manufacturers to deliver the goods. Suppose he does incur a capital charge of that magnitude? It only amounts to five dollars per acre spread over the extent of his whole project. It is doubtful if anyone else pioneering on the grand scale in these times of difficult supply can come within shooting distance of this managerial feat.

Besides the capital charges, Lassiter's operational costs are on a scale that look astronomical in the farming



Eighteen-foot brush pilers working in gangs on the Lassiter project.

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business. The mechanics who keep the wheels turning draw \$1.25 an hour. Cat skimmers get \$1.00 an hour. Ordinary farm labor is paid 75 cents an hour. Twelve-hour shifts and year-round farming roll up an annual wage bill that looks like the intake of the Irish Sweepstakes.

But my guess—and it is only a guess—is that O.B.'s farsightedness, courage and resourcefulness will overcome all the obstacles that stand in the way of bringing this stretch of bush under the plow. After that, what?

Some local old-timers declare that the cultivation of vast tracts like this will lessen the rainfall. Rubbish! The rainfall in any area is determined by climatic forces hundreds of miles away. It is more likely to reduce the risk of fall frosts, as it has on the settled prairies, by increasing the day time intake of heat in cultivated ground.

More serious, however, are the doubts arising from the character of the soil. The soil on this project must be classed as grey wooded, albeit it is the best grade within that category. It has all been selected by Wm. Odynsky, federal government soil scientist, as likely to support a farm population. It has all been burned over by fires severe enough to have eaten out patches of peat, but the technical fellows say that the loss from the burning has not been critical.

More significant is the agricultural history of surrounding communities on identical soil. Take Tangent, for instance. The first settlers around this town grew grain, a crop which thrived for three or four years, after which yields declined gravely. By the time the farmers at Tangent fully appreciated the limitations of their soil, they were broke. As this coincided with the trough of depression, sure enough the whole West was in a condition not much better. But elsewhere farmers could look forward to a return of good crops. At Tangent the outlook for grain farming was as bleak and cold as the fringe of a polar bear's petticoat. Salvation came from growing alfalfa seed. It provided the growers with cash and restored their soil so that it now grows grain profusely again.

ALFA seed and long rotations may be all very well for family farming, but will it fit in with the style of farming under which this driving Tarheel accumulated fame and some degree of fortune on the rich plains of the south? Can his big gamble with time wait for the slow and capricious returns from alfalfa seed?

It might be apropos to say something of the chances of the future settlers who are to farm parcels on the Lassiter project. Returned men are to get first choice, which is as it should be. But returned men from any part of Canada have equal right of entry. That may be just too bad for potentially good fellows without much capital who do not know the vagaries of the country.

On Lassiter's principle that nobody works any more, none of these boys will have horses. By the time they have bought a tractor and built a shack their D.V.A. grant will be exhausted. The country is absolutely without roads, telephones, schools or even surface water supply. Of course all the old-timers survived without these amenities, but part of their armoury was the willingness to wait and endure. The Peace River valley can be colder than Inkerman Barracks, and pay days may be further apart than the stupidest pay bloke can make them.

Probably the incidence of this risk does not increase O.B.'s gamble very much. For every settler who fails there will be an eager substitute. Anyway, O.B. hasn't had much acquaintance with failure and he would probably dismiss this aspect of the case with a shrug, going forward with the same fixity of purpose against long odds that have earned him his moniker of "Long-shot Lassiter."

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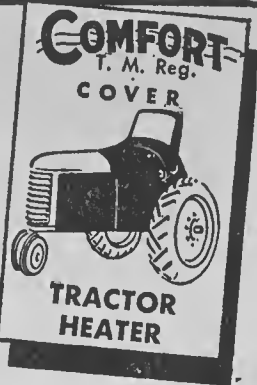
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That Leaky Tank

As told by Prof. G. L. Shanks, Manitoba University

MORE requests come to my desk from farmers asking how to stop a concrete tank from leaking than on any other subject. Few of the authors of these letters seem to realize that their difficulty could probably have been avoided had they followed certain well known principles of concrete construction. In any discussion of the subject it is well to mention them briefly, for one must know the cause of failure before he can prescribe a remedy intelligently.

In any case, it is a subject which merits a deal of publicity because the rapid expansion of rural electrification now going on in Manitoba makes it certain that farm water storage tanks are sure to be multiplied within the next few years. Attention to these details now will cut down the crop of trouble in years to come.

Where most farmers fall down is in the choice of an aggregate. If you accept any good looking, bright mixture of sand and gravel, you are headed for trouble. A good mix is one part cement, two parts sand, and four parts gravel. The theory is that the sand fills in the spaces between the particles of gravel, and the cement fills in the spaces between the grains of sand, binding the whole together. If you have too high proportion of sand or gravel you will have weaker concrete because more sand requires more cement.

You cannot afford to guess the suitability of an aggregate. You must give it the screen test. Not the kind they apply in Hollywood. You must put the aggregate through a quarter-inch mesh and determine the ratio between the sand and gravel, making up any shortage which the sifting discloses.

AN equally serious fault is the use of an aggregate which is not free from earth. If you have any doubts about it, pour four inches of aggregate into a pint Mason jar; add water; shake; and allow to settle. If, on subsiding, you get a film over one-eighth inch deep, discard your aggregate as unsuitable. It will be cheaper than mending the crack you are about to build.

Next make sure that your aggregate does not contain lime pebbles. You will know them by their white color when they are broken. In time these lime pebbles decompose and in doing so exert a tremendous pressure on the surrounding concrete sufficient to produce cracks.

Even with a good mix it is possible to ruin a job by the use of too much water. It is quite a temptation to use an excess because a sloppy mix pours easily and can be smoothly finished without so much effort. Even with the driest aggregate it is rarely necessary to use more than five gallons of water per bag of cement. With a damp aggregate you may need less than four and a half gallons. A mix too wet means a loss of strength in the finished job.

Reinforcing is a problem in these days of steel shortage. Many Manitoba farm tanks are being built this year with barbed wire for reinforcing. It would be better to do without the tank till steel becomes more easily procurable. Reinforcing steel for farm tanks should be not less than $\frac{3}{8}$ inch in diameter and ought to be put within two inches of the outside wall. If steel rods are not hooked together, they should overlap eight inches and be wired together at the ends. It is false economy to try

to make up for the lack of reinforcing steel by using more concrete. Farm tank walls over eight inches wide are rarely justifiable, and for most sizes six inches is sufficient. When in doubt add more reinforcing steel.

Construction joints are a common pitfall for farm tank builders. If there is an unsealed joint between two days' pouring, you may expect your tank to leak. The ideal would be to pour the whole tank at one operation but this isn't practical as a rule. I prefer to pour the sides on one day and the floor subsequently. The most satisfactory way to seal a joint so formed is to have a metal strip embedded at least two inches in both the wall and the floor. If the wall is poured first the strip may be allowed to protrude between two retaining boards, and bent at the vertical two-by-fours, straightening them out again before the floor is poured.

The strongest form of tank is a circular one. It is not a difficult design to construct if the boards in the wall portion of the form are vertical, except in this case the joint cannot be sealed so readily by a metal strip. In this case pitch may be used.

IF the tank is properly designed and the foregoing precautions observed, there is an overwhelming probability that the tank will not leak. When one is asked to recommend a method of overcoming a leak, he tries first to discover which one of the rules have been disregarded before he tries to prescribe the cure.

Most failures occur because of weak concrete. Sometimes the structure is irreclaimable and the only choice is to build a new tank inside the old one. Occasionally a farmer will say, "My tank is all right when there is only a little water in it, but when it is over half full it leaks." Obviously the walls are not strong enough to take the tension when it increases beyond a certain point. Concrete will stand tremendous compression loads, but its tensile strength is not great, and the strain put on the side of a tank is a tensile strain. In some cases cracks can be closed by pulling a tank together. In circular tanks, for instance, silo hoops may do the trick.

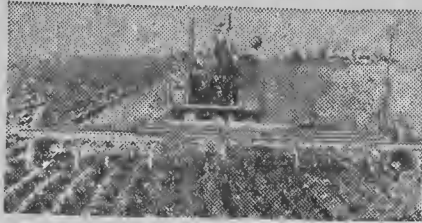
IN some cases where the concrete is strong enough to take the strain of a full load, but the trouble arises out of a porous concrete, a cure can be effected by painting the inside wall with pitch. Paint one coat, and while still wet cover with burlap. Follow, when hard, with another application of pitch and a second coat of burlap. Finish with a third layer of pitch.

Another resort in case of a tank with no large visible cracks is to plaster the inside with two coats of rich concrete. These should be at least one-half inch thick, and of one part cement to two parts sand. It is not as easy as it sounds, and it may be good economy to get a plasterer to do the job.

None of the remedies prescribed, except the first, can be guaranteed on hopelessly inadequate tanks. All of them represent expense so that in stressing the difficulty of a cure I shall have done something useful if I have impressed farmers with the amount of grief which may be avoided by sticking closely to the rules when the structure is first put together.



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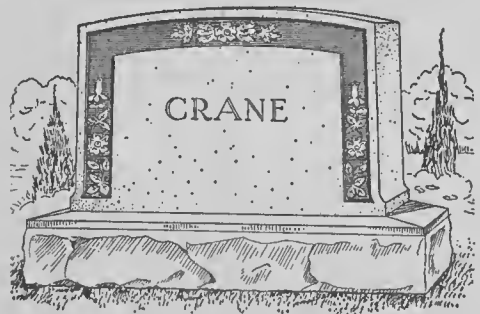


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UNDER THE PEACE TOWER

Continued from page 13

tically embargoed many kinds of American goods. We may have to go back to that system. We can of course get British pictures, we can import South Africa oranges, and we can get gasoline from Venezuela. But it doesn't look as if, in the case of these necessities, we can cut down a great deal. Where we likely will be obliged to ban U.S. imports, will be in the case where a similar product is manufactured in Canada. For instance, while it is true we cannot grow grapefruit in Canada, we can make suits and motor cars and vacuum cleaners and toys and radios and a thousand other commodities. Therefore, I suggest that the axe of embargo will likely fall on such American commodities as can be duplicated in Canada. Then how much farther we care to go beyond that is something that no one here cares to predict at the moment.

It is obvious however, that we are, compared to Americans, the poor relation, and that we can never hope to keep up to United States in luxury buying, or even, in many instances, necessity buying. So, if we do not make some kind of deal with Uncle Sam, it's austerity for us.

Many here believe that we shall achieve some eleventh hour solution. For instance, the Americans might decide to take the Canadian dollar either at par, or at a de-valuated figure, say 85 cents, or they might wrap up these Canadian dollars and forget about them. They could say that they'd put them by till our dollar got worth more, or till world trade was restored. They might keep them to buy commodities from other countries, so that Chile, for instance, could buy things from us with the Canadian dollars she got from United States. For, once our Canadian dollar got Uncle Sam's blessing, and had a certain value, its convertibility would be as good as that of the American dollar, even if there was a marked down value to the dollar itself. In other words, even if our Canuck dollar were worth only 85 cents, our dollar would then have free and easy exchange, once Uncle Sam put his O.K. on it.

This is one crisis the man on the farm cannot overlook. Not one person in a hundred seems to know what this present dollar crisis is all about. Nor is it easy to explain. But the plain fact is that Canada is rapidly going broke, as far as United States is concerned. Our store of American dollars is vanishing, and the place we keep them will soon be like Mother Hubbard's Cupboard—bare! No farmer, no city man, nobody in Canada, can escape this coming crisis. The main thing to remember is that this is no fancy affair, just for the experts. This is something that is going to affect us.

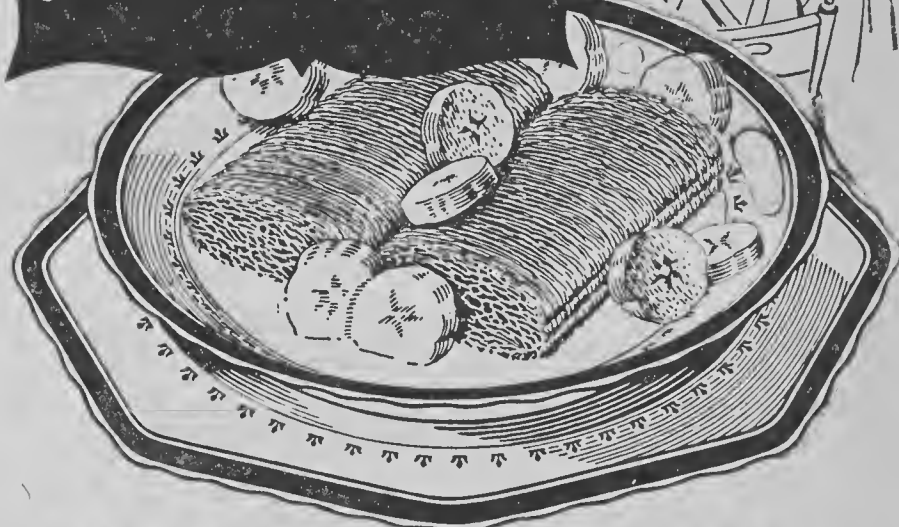
Finally, this is one thing that the Cracker Barrel politician cannot settle. Usually, in Ottawa, there are ten solutions for every political problem. This is one that no one seems able to solve.



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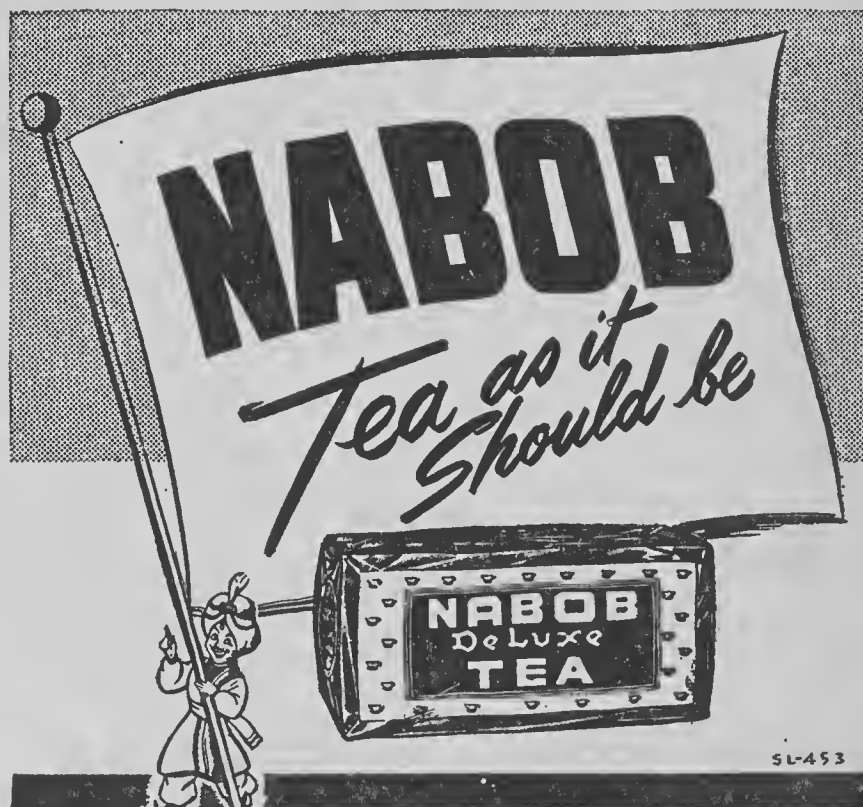
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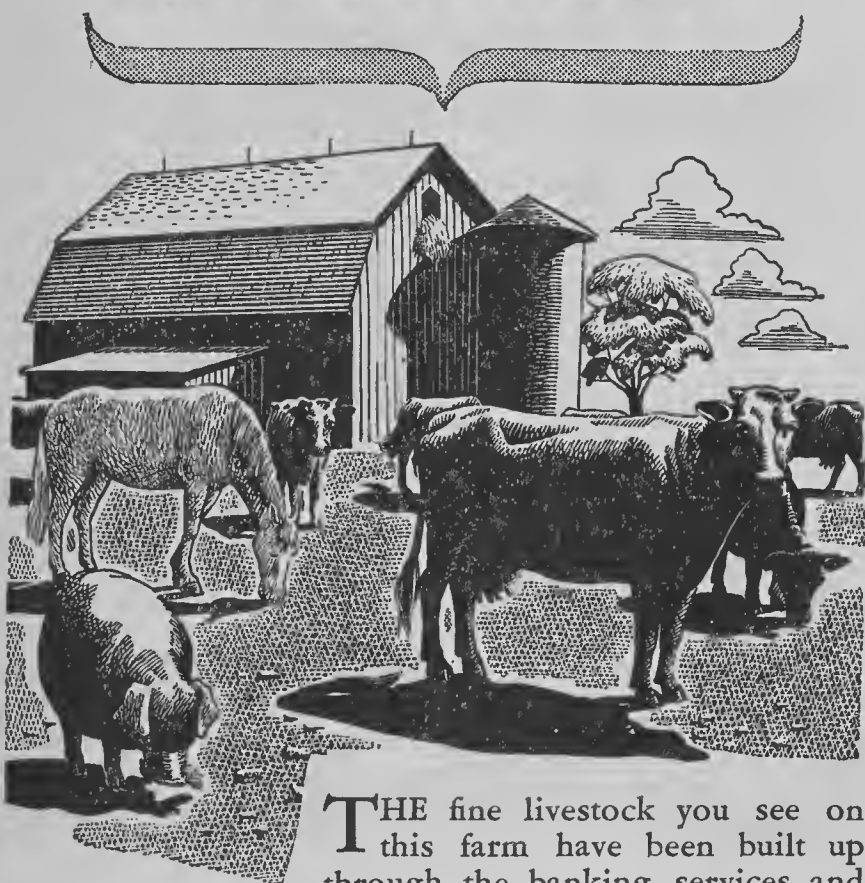
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THE GRIM HUNT

Continued from page 6

Kitty's eyes were sharp. "Good looking, is he?"

Bob chuckled.

"You don't think much of her—?"

"I hate her! She tried to make love to you!"

"Don't be that way!"

"Well, I notice Mr. Frame hasn't brought her near you again."

He laughed at her and kissed her. Thinking what Mr. Thomas would say in the morning, Bob was too excited to sleep much that night. He was out before dawn to listen for the crowing of the cocks as they emerged from the swamps to feed. At eight o'clock he reported to Mr. Frame the results of his scout. "Plenty of cocks came out of the swamp back of the Hammock," he said. "I counted seven that I'm sure of. They mostly settled in the bushes between the swamp and that swale that runs down to Hazen's camp. Then I went over back of Round Pond and heard four of them crowing on the knoll there, mostly on the south side of the knoll."

"We'll try Round Pond first."

"I can't go there with you," Bob explained. "I have to telephone Boston at nine."

"Well, you can find us. You can pick us up either at Round Pond or back of the Hammock."

Bob stayed to see them off. He noticed that Mr. Frame wore gloves—new ones. Mr. Frame had never worn gloves before. "Shoot with gloves on, do you?" he asked.

"I'm going to try it. It will protect my hands if I have to work through the brush."

Bob reflected that Mr. Frame never did work through the brush; but he did not say so. The pointer, Mac, was full of eagerness this morning. Before they set out, Mr. Frame slipped over the dog's head the loop of the rope of which he had spoken the day before. Bob examined it in astonishment. The rope was only six or eight feet long, but its free end was neatly bound with wire, with four or five ends of wire projecting and bent in hooks.

"They catch on the brush and slow him down," Mr. Frame explained. "Of course they just check him for a minute before they straighten out. 'I'm taking along a pair of pliers to bend them into hooks again if I have to; but usually he learns his lesson by the time that they're all pulled straight.'"

Bob nodded, making no comment, thinking what he chose. Mr. Frame brought out his gun—the beautiful over-and-under. Chan Ford had a 12-gauge double. Mr. Frame gave his gun to Bob to hold, while he ordered Mac into the car and coiled the short rope. Bob opened the gun and squinted through the barrels, admiring the mirror-like beauty of the polished steel. Then Mr. Frame took it from him and laid it crosswise on the floor in the rear of the car.

Chan Ford laid his beside it, putting it in from the other side, so that one gun pointed one way, the other the other. Bob remembered that Mr. Frame in the past had always been careful to leave his gun with the breech open, the barrels resting on the seat; but Mac was on the seat this morning. Probably that was why Mr. Frame laid the gun on the floor, so Mac would not knock it over. Nevertheless, here was another change in Mr. Frame. There were so many changes in him that the man was like a stranger, and it bothered Bob; made him unusually alert.

He watched them drive away, then returned to town. Kitty stood at his elbow as he took up the telephone. When Mr. Thomas came on the wire, he

said at once—and there was a stiffness in his tone: "Bob, I understand you're guiding Mr. Frame?"

"WHY, yes, sir. Locating birds for him."

He'll be here three days. But if you want me for anything, I can get out of it." He added a frank question: "How do I stand for Charlie Merritt's place, Mr. Thomas?"

"Why, I haven't checked the list," the chief warden told him guardedly. "I know there are two others who stand pretty high. You've guided Mr. Frame before, haven't you?"

"Yes, sir. So has Charlie Merritt." In spite of himself, Bob's tone was defensive.

"I've heard that he sometimes shoots hens—" Bob looked up at Kitty uneasily, and Mr. Thomas asked: "Did he ever shoot any hens when you were out with him?"

Bob evaded a direct answer. "He won't shoot any this trip, not without going to court for it—I hope you'll give me a chance at the warden's job, Mr. Thomas."

"I'll see. I'll let you know. Goodbye."

Bob heard the click as Mr. Thomas hung up, and Kitty saw the disappointment in his eyes. He said ruefully:

"Mr. Thomas doesn't like my guiding Mr. Frame."

"I had a feeling that was it."

"I guess he knows about Mr. Frame's shooting hens when I was out with him. He holds it against me!"

Kitty told him not to worry, everything was going to be fine. "And at least you can see to it that Mr. Frame doesn't shoot any hens today."

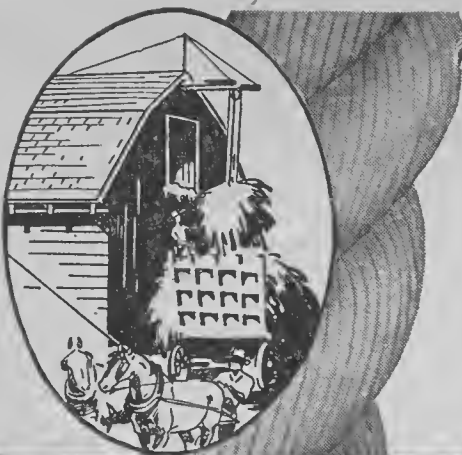
But Bob was pretty low in mind when he drove out toward Round Pond to rejoin the two men. From a hill half a mile away he could see the heath where they were gunning. He stopped the car to watch them. Even from this distance, he could recognize Mr. Frame by his shorter stature; and he saw presently the little man fling up his gun. He heard two reports, but he was too far away to see the bird. Chan Ford was at some distance from Mr. Frame. Bob watched and saw the white dog moving, and he judged Mac was retrieving a dead pheasant.

Bob stayed where he was till the men turned toward their waiting car. They would be proceeding to the Hammock, and he took a crossroad to overtake them. As he came in sight of them, a quarter mile away, Mr. Frame was standing by the car. He saw Bob and waved his hand. Mr. Ford was already in the car, Mr. Frame got in and drove on, and Bob followed, a hundred yards behind.

But he drove inattentively, thoughts in confusion, miserably sure he had lost his chance at the wardenship, wondering again why Mr. Frame had changed his habits in so many ways. He wondered whether the bird he had seen him kill at Round Pond was a cock or a hen, and made up his mind that if it was a hen Mr. Frame would go to court for it. The thought made Bob set his jaw and open the dash locker of his car to make sure his revolver was there. Mr. Frame, it was conceivable, might under certain circumstances be obstreperous. Bob belted the revolver on.

They meant to gun, next, the heath above the Hammock, and the swale that ran down to the pond. There was a place where gunners usually parked, pulling off to the left of the dirt road on a little level sward. Bob was still some distance behind the other car when it reached this spot; but Mr. Frame, driving, did not stop there. He went on a hundred yards and pulled off on the right of the road, where there was just room to park between the road and the ditch.

Bob parked at the usual place behind them. When he alighted, Mr. Frame was already out of the car ahead. He saw Bob and waved his hand. Chan Ford got out of the car on the other



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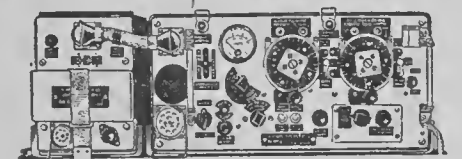
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side in the ditch. He opened the rear door on that side to get his gun, and at the same time Mr. Frame opened the door on his side. Bob saw Mac, the pointer, bound out of the car and bring up short as though something had checked him, and at the same time he heard the report of a shotgun.

Then he saw Chan Ford bend forward limply at the middle and go down!

Bob burst into a run. Mr. Frame skipped around the front of the car to where Ford lay, and Bob met him there. Ford was already dead. The full charge had hit him high in the stomach. They laid him down. Mr. Frame said in a whisper of horror: "He's dead!"

"Yes, he's dead." Bob looked into the rear seat of the car. The doors were open on both sides. The guns lay on the floor of the car. Ford's own gun had killed him. It was pointed this way. Mr. Frame's pointed out the opposite door. There was no sign of the pheasant Mr. Frame had shot. Mr. Frame began to babble: "Chan forgot to unload his gun! I asked him if he had, when we got into the car! He said he had, but he didn't, Bob!"

"It was loaded, all right," Bob said slowly.

"Mac jumped out on my side of the car when I opened the door," Mr. Frame said. "His rope must have caught in the trigger."

"I saw Mac jump out," Bob agreed. "I'll stay here with Mr. Ford," he said. "You take my car and beat it to town and fetch Doctor Fiske. He's the medical examiner."

"We can lift Chan into the car, take him along."

Bob shook his head.

"No, we'll leave things the way they are till Doc Fiske has seen him."

MR. FRAME looked down at the dead man. "This is terrible!" he muttered. "Bob, he was the best man in our organization! I shouldn't have brought him, but I thought he knew how to handle a gun! My wife was very fond of him. This will break her all up. He was a fine man."

"It's tough, all right," Bob assented. "Get Doctor Fiske. I'll stay here."

"Yes, that's best." Frame trotted back to Bob's car, climbed in and drove away.

Bob did not touch the car. Both the side doors hung open. Chan Ford's gun was caught, its butt wedged against the door jamb. Probably, but for that fact, the jerk of the rope and the recoil would have thrown it out of the car. If Chan Ford had been on level ground instead of in the ditch beside the car, the charge might have gone between his legs. At worst, it would have hit him in the leg; but Bob knew that a 12-gauge shotgun charge through the leg at close range will often kill a man. He went to look at the dead man for a moment, and at the guns still lying crosswise in the car. Then he leaned against the rear of the car and lighted a cigarette. Mac, already bloody from the briars, lay licking his wounds.

It was almost an hour before Mr. Frame got back from town. Bob smoked four cigarettes and did some thinking, frowning at the ground. This was a hard thing to happen to a man whom he was guiding. He would be blamed for it. He realized now that he had had a premonition of disaster—a vague, uneasy foreboding that could have arisen only from the changes in Mr. Frame.

Mr. Frame had been genial instead of arrogant; and there had been a suggestion of excitement, of tension in him. He had left old Pal, a good pheasant dog, at home, and had brought a fast pointer, untried on pheasants and sure to be cut to pieces in the brush. The pointer dragged a rope. Bob had seen dogs drag a rope before, but he had never seen a rope armed with hooks

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Again, why did Mr. Frame lay his gun crosswise in the bottom of the car, so that its muzzle faced anyone opening the car door, instead of leaving it safely on the seat as he was used to doing? Why did he wear gloves that slowed down a man's shooting? Why did he park his car here beside the ditch, instead of in the more convenient place a hundred yards away.

These things began to assume a pattern in Bob's mind; but the trouble was, Chan had been shot with his own gun, and it had been left loaded by his own carelessness. That did not fit the pattern. Bob was still trying to make it fit when Mr. Frame returned from town.

He came in Doctor Fiske's car, with the doctor driving; Jem Hayes, the state policeman, trailed them on his motorcycle. They nodded to Bob, and the doctor knelt to look at Chan Ford. One glance was enough. "He never knew what hit him," he decided.

BOB looked into the car. He started to speak, then was silent, studying the position of the guns. The pieces of the pattern abruptly fell into shape in his mind, and suddenly his course was clear. "I haven't touched anything," he said. "That's so, isn't it, Mr. Frame?"

"That's so," Mr. Frame assented, peering into the car to make sure. He called Jem Hayes to see. He said: "This is Ford's gun. Mine's the over-and-under. I asked Ford if he had unloaded his gun, and he said he had. I keep a rope on my dog, with hooks on it to slow him down. The dog jumped out on my side, just as Chan opened the door on his side. The hook caught the trigger, I suppose; and the gun went off. That's the way I figure it."

"I guess that's the way it was, all right," Jem said. Mac watched them.

He stood near, slowly wagging his tail, his eye turning from one to the other. Jem said: "That's a good-looking dog, but he's cut up already. A pointer can't stand the going here."

"We hunted the Round Pond cover all over," Mr. Frame explained. "He went fast, but he'll slow down from now on."

Bob asked, almost casually: "Did you get any shooting down there, Mr. Frame?"

"Put up two cocks, but we didn't get near enough to down them."

"Mr. Ford do any shooting?"

"No, he didn't fire a shot."

"What was it you did get?" Bob insisted, his tones now stern.

Mr. Frame hesitated. Then he grinned and asked ruefully: "How did you know?"

"I saw you shoot, from the hill and I saw the dog retrieve a bird."

"It was a hen," Frame confessed. "I put it in the trunk in back, so you wouldn't see it."

"You can't shoot hens," Bob reminded him.

Mr. Frame protested: "Oh, forget it! The hen doesn't matter. Ford's dead." He told them all, in grieving tones: "Why, he was a friend of mine, the best man in our organization!"

Bob put another question: "You shot a double at the hen?"

"Yes. I shot too quick the first time."

Bob looked at Jem. He said slowly: "Jem, I'll make you a bet." His tone was such that they turned to watch him, waiting.

Jem Hayes asked: "What kind of bet, Bob?"

"I'll bet you a dollar to a bent pin that Mr. Frame here let Mr. Ford use his over-and-under in the Round Pond cover."

Jem stared at him, frowning, bewildered. "What about it?" he asked.

Before Bob could answer, Mr. Frame

stepped forward. "No, I didn't," he protested.

He started to pick up the over-and-under; but Bob stopped him. "Leave it lay," he said. His revolver suddenly was in his hand.

Frame cried angrily: "What's the idea?"

"I'm arresting you for—for shooting a hen pheasant," Bob told him. "Don't touch your gun. Back off."

Mr. Frame licked his lips, but he backed off, watching the revolver. Jem Hayes asked in a low tone: "What's up, Bob?"

"I think Mr. Frame here killed Mr. Ford on purpose."

There was a moment's silence. Then Mr. Frame cried: "You blasted fool! I wasn't even near the car. You saw me yourself!"

"Why didn't you park back there where we always do?"

"I left that place for you. I saw you coming, in the mirror. There's just room for one car there."

BOB shook his head. He said implacably: "You came on here so Mr. Ford would be down in the ditch when he got out, so the charge would hit him waist high. You used his gun at Round Pond, and you left it loaded, and you hooked the rope into the trigger when you put Mac in the car. All you had to do, when Mr. Ford was in the right place, was to call your dog. He jumped out of the car, and the rope pulled the trigger and killed Mr. Ford." Jem and Fiske looked at Frame.

Mr. Frame cried: "You're crazy! It was Ford's own gun!"

"I told you, you used his gun at Round Pond, and he used yours. It was you that left his loaded." Bob kept his revolver levelled on Mr. Frame. "You figured it out 'way ahead," he said slowly. "You even wore gloves so your fingerprints wouldn't show on his gun."



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You fetched Mac here along instead of Pal, so you'd have an excuse to put a rope on him. You rigged that rope with hooks on purpose. I don't know why you wanted to kill Mr. Ford, but I know you did it."

Mr. Frame exploded: "Blast it, I won't stand this!" He appealed to the others. "Bob's crazy, and you two are fools to listen to him!"

Bob said evenly: "Look at the guns, Jem. You heard Mr. Frame say that he shot a double at that hen he killed, but he didn't do it with his own gun. I'll give you odds the over-and-under isn't dirty. It was Ford's gun he used to kill the hen—and to kill Mr. Ford. Look and see."

He did not turn his head, nor his glance, from Mr. Frame; but he heard Jem move behind him, heard the clean click of the fine lock on the English gun. Then Jem said: "That's right. His gun is clean as a whistle." He added, a moment later: "And Mr. Ford's gun, both barrels have been fired."

For a moment no one spoke, three men facing one accusingly. Then Mr. Frame mopped his brow. "You haven't got a chance to make that stick," he muttered. Then as Jem Hayes moved toward him, he cried hurriedly: "I'll sue you for false arrest, Hayes! If you lay a hand on me, I'll ruin you!"

Bob said: "Leave him be, Jem! I'll take him in for killing the hen. He won't sue me. You can swear out a warrant for him on the other killing, after we get to town."

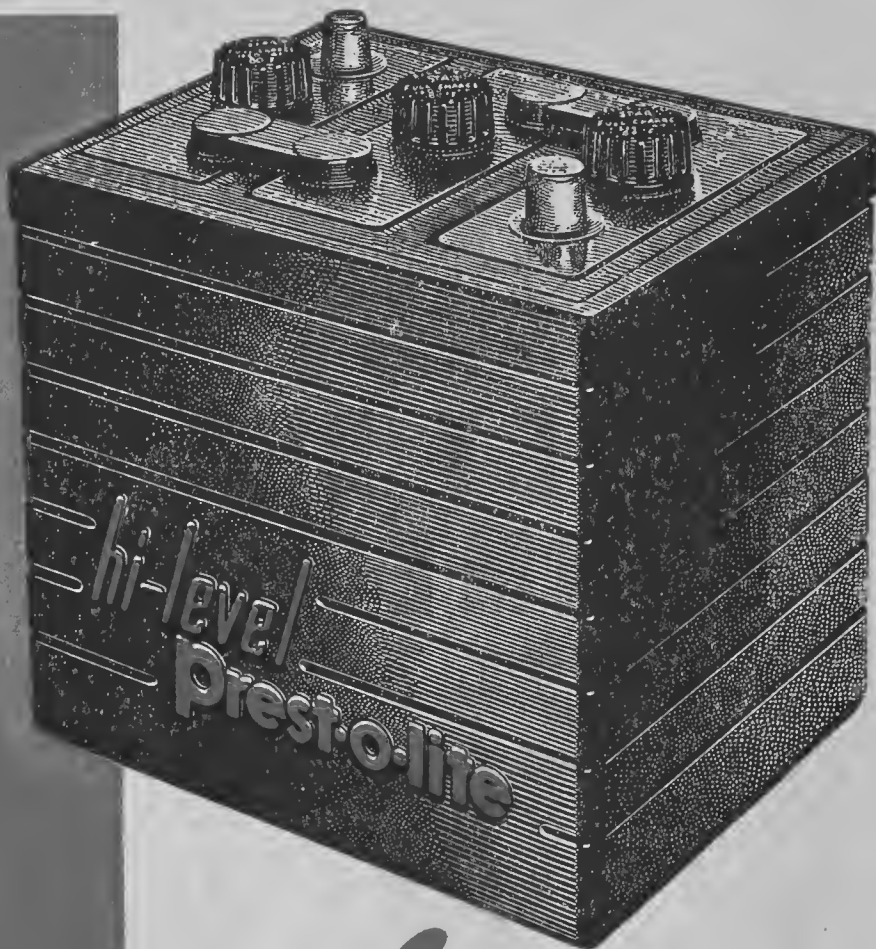
When Mr. Thomas telephoned, just before supper time, Bob was sitting near the instrument, waiting hopefully; and Kitty, with young Davy in her arms, was on his knee. Kitty watched Bob while he listened to Mr. Thomas. She saw his grin, and he whispered to her soundlessly: "I get the job!" Then he said, into the phone: "Why, thanks, Mr. Thomas. I'll try to make a good warden."

Kitty hugged him so hard he almost dropped the telephone, and her ear was so near his that she heard Mr. Thomas ask: "How did you figure it out?"

"Why, I'd noticed that Frame was different from what he'd been before, in a lot of ways. When Mr. Ford was killed, I got to wondering; but I couldn't make any sense out of it till I saw that Mr. Frame had used Ford's gun at Round Pond—when he shot the hen. The thing that tipped me off about that was the way the guns were in the car. A man might pull a gun out of a car muzzle first, if he was a damned fool; but nobody would put a gun into a car with the muzzle toward him! Mr. Frame was driving the car, so he got in on that side and Mr. Ford on the other; but Mr. Ford's gun was the one with the butt toward the driver's side, so I figured Mr. Frame must have been the one to put it there."



"Call Ted back! He forgot some of his tools."



Less worry...
**needs water
only 3 times
a year*...LASTS
LONGER, TOO**

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**100 lbs. of Feed
Produce 39 Extra
Pounds of Milk...
When Ground!**

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Here's why grinding pays: Many grains resist digestion because of their hard coatings. When the coatings are broken by grinding, the nutrients are exposed to the digestive fluids—and your livestock make fuller use of the feed.

GRINDS TWICE AS FAST! "With my old hammer mill, it took me one hour to grind about 24 bushels of feed. My Harvey Red Hed Mill grinds 24 bushels in one-half hour."

SAVES 150 HOURS A YEAR! "... It used to take me 4 or 5 hours to get a load of feed ground, counting hauling and waiting. I grind the same amount with my Harvey Hammer Mill in less than an hour. I figure my Harvey saves me at least 150 hours a year."

CUTS COSTS \$100 A YEAR! "... I figure I save more than \$100 a year by owning a Harvey Hammer Mill and doing my own grinding."

You bet, the Harvey Red Hed Hammer Mill is increasing profits, cutting costs, and saving time for farmers. Swinging hammer heads—they're tough and jagged—smash feed with 80 to 280 shattering 12-ton blows every second. Extra-large screen area speeds grinding, pre-

vents clogging. Special built-in "grate band" at top of grinding chamber increases cracking and crushing efficiency.

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These are just a few of the features that are making the Harvey first choice with farmers everywhere. See this hammer mill at your dealer's.

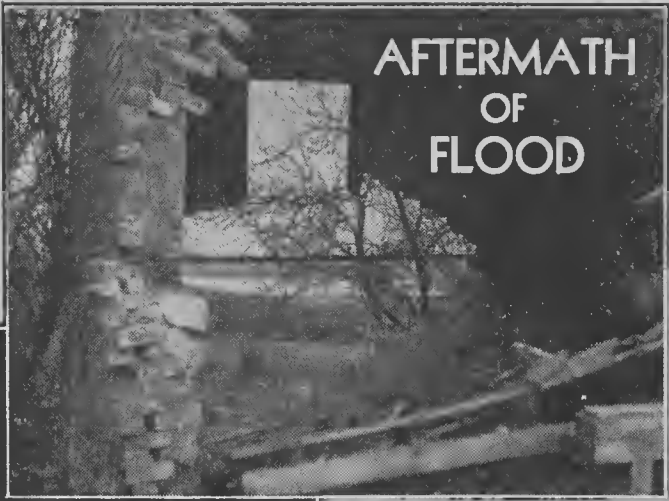


The Canadian FAIRBANKS-MORSE Co. Limited
Winnipeg, Regina, Saskatoon, Calgary, Edmonton, Vancouver.

I am interested in learning how I can earn more money by grinding feed with your Red Hed Hammer Mill. Please send me full facts without obligation.

NAME.....
ADDRESS.....

Britain's present difficulties were aggravated by the tragic winter of storm and flood



AFTERMATH OF FLOOD



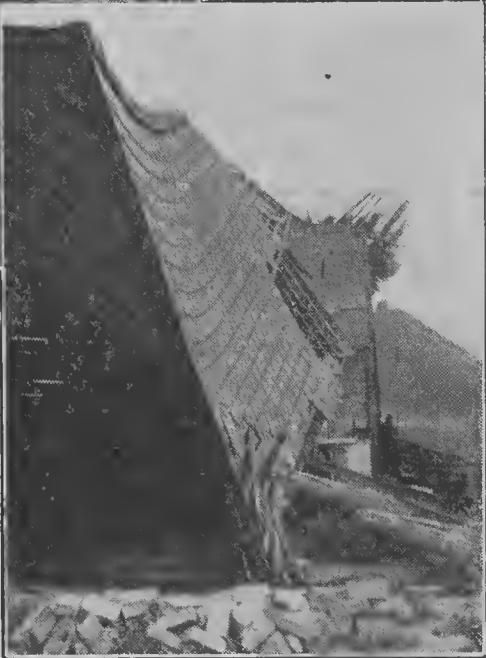
course there has been no chance to get any crops from the land this season."

The full extent of the loss will be appreciated if it is realized that the flooded fens contain much of England's most productive land. On these heavy, flat expanses within short trucking distance of the London market there is an intensive production of high priced crops. In the previous year this writer saw one 300-acre crop of celery.



THE June issue of The Guide carried R. C. Brown's account of his visit to the worst flood damaged areas of Britain, the fens lands of Cambridgeshire. This week's mail brings us a complimentary letter from Arthur Norman who farms in the heart of that region. Accompanying his letter was a batch of pictures taken in June after a partial subsidence of the flood water. From these we have made a selection for this page.

Says Mr. Norman, "Most of the devastation was due to the appalling gales which we experienced when the water was at its height. We are now endeavoring to make some assessment of the damage and to portion out compensation from the N.F.U. and the Lord Mayor's funds. Our farmers are as cheerful as ever and are now busy from dawn till dusk cultivating the land and getting it ready for autumn sowing. Of



In square above: a farm house at the height of the flood. Below: what the receding water left. Photos on this page courtesy of Arthur Norman. Linden Farm, Haddenham, Isle of Ely.

The Country Boy and Girl

Caroline Calf

By MARY E. GRANNAN

CAROLINE was a little calf and a great many things happened on her account. She was born one summer morning in a barn at Mr. Whittlesby's farm. Mrs. Whittlesby looked down on her and said in her kind old voice, "I have no room for you here, Caroline, so I'm going to give you to Janey Jones for a birthday present. Janey is very kind to me. She brings me flowers every day. And she'll love you, little calf. She'll love you with all her heart. I'll bring her out to see you when she comes today."

Janey came at half past ten. Jeremy Jilks came with her. Jeremy was always with Janey. They played together. Jeremy had a boat called Whizzbang. It was a big flat-bottomed boat, and they had such fun in it. Jeremy was going to make sails for Whizzbang, so they could round the cove and see what the rest of the world looked like.

Janey had a house in the apple tree. They had fun there too. It was so high they could see far beyond the winding river. They could see housetops in the valley, too, because Janey's appletree house was on a hill. Janey'd leave her house anytime, however, to sail with Jeremy. Jeremy'd leave his boat anytime to play in the house with Janey. That's the way they were, always together and always having fun. And that's why Jeremy was with Janey when she took flowers to Mrs. Whittlesby. Today she had daisies from the meadows. They were so lovely that Mrs. Whittlesby cried out when she saw them, "Janey dear, these are the loveliest daisies I have ever seen. Where did you get them?"

"Let me tell you, Mrs. Whittlesby," said Jeremy. "She got them in the meadow and it took her a hundred hours to pick them because she'd just pick the big ones, and I had to wait all the time for her."

"Now that's too bad," said Mrs. Whittlesby.

"It is not, Mrs. Whittlesby. I told him to go sailing if he wanted to. But he wouldn't," said Janey.

"It's no fun without Janey," said Jeremy.

"You do have fun together, don't you? And Janey is so good to take time to pick flowers for me. Janey, I've got something for your birthday, because you've been so kind." She took Janey and Jeremy out to the barn and she showed them the little calf. Janey's eyes sparkled with happiness.

"You don't mean you're going to give the little calf to me, Mrs. Whittlesby?"

"She's for you. You can call her whatever you wish. I haven't named her yet," said the old lady.

"Then her name is Caroline. I love Caroline for a name. When will you send her up to our farm, Mrs. Whittlesby?" said Janey.

"On your birthday. That's the day after tomorrow, isn't it?" said the old lady, smiling.

Two days later the little calf was in Janey Jones' pasture, and Janey Jones was with her. Jeremy came to tell Janey that he'd finished the sail for Whizzbang, and that he'd take her for a sail.

"May I bring Caroline?" asked Janey.

Jeremy's face darkened. "No, you can't bring any old calf into my boat. Leave her in the pasture and come on."

"But she's lonesome for her mother, Jeremy, and your boat has a big flat bottom, she wouldn't hurt it."

"She's not coming," said Jeremy, and he went down the hill and went sailing alone. Jeremy, although he didn't know it at the time, was jealous of a little calf.

SEPTEMBER school bell rings for you again and you are not sorry to answer its call for during the long holiday you have missed your chums and the good times you had at school. When you are playing games with your friends you often use a rhyme to decide who will be "it" for a certain game. Try this one:

Intry, minstry, cutry corn,
Apple seed and apple thorn:
Wire, briar, limber lock,
Three geese in a flock:
One flew east, one flew west,
And one flew over the cuckoo's nest!

Have you organized a Junior Red Cross group in your school? If not, this is the time the groups are forming and your teacher can get all the information for forming a group from Red Cross headquarters in the capital city of your province. The Red Cross carries on its work of helping people in need at all times and the "Juniors" have taken for their special care the helping of crippled children. How proud you "Juniors" must be when you hear that a crippled child you helped can run and join in the games with other children! How proudly you must wear your Red Cross badge and answer to your motto "I SERVE." Good luck to all the new groups of Junior Red Cross who are forming this year and Carry On to all the "Juniors" who will continue their groups this fall.

Ann Sankey

Days went by, and the children did not see each other. Janey didn't want to leave Caroline alone, Jeremy didn't want her along. They were both unhappy.

Then one day when Jeremy was walking on the line fence by the pasture, he tumbled off on to a stone pile and lay very still. Caroline was in the meadow alone at the time, because Janey was at lunch. Caroline saw Jeremy fall. She ran to him. He lay very still. She licked his face and called "Maaaaa," but he didn't move. So Caroline went for Janey. Caroline broke down the pasture gates and went crying up to the kitchen window of the farmhouse. Janey knew something must be wrong. She followed Caroline and found the still little Jeremy.

Three days later when Jeremy was all better except for a few scratches, he came up to Janey's appletree house. Caroline was grazing in the front yard below. "Janey," Jeremy said, "I've come to ask you and Caroline to go for a sail in Whizzbang. I've been pretty silly. I've been jealous of a little calf. I guess there's room in the world for everybody, especially a nice little calf like Caroline."

"Yes," said Janey, "I guess there is, and Jeremy, I've been so lonesome."

"Me too," said Jeremy. "Well, come on, let's go."

"Maaaaa," said the happy Caroline.

How Polite Are You?

IN your everyday life you are constantly coming in contact with other people. How do you think you measure up for politeness? Courtesy, you know, is one of the outstanding characteristics of the great men and women of the world. They must be great in the little acts of life as well as in the big ones.

Let's see, then, how well you rate. Put a check mark after any of the following questions to which you can truthfully answer "yes." The method

of scoring to determine your standard of politeness will be explained later.

1. Your friend has a new dress or suit which to you looks ridiculous. Are you ever frank enough to say so?

2. You want to listen to the radio but you see that your parents wish to read. Do you occasionally tune in quietly?

3. When telephoning a school friend have you ever started, "Guess who is speaking?"

4. Your mother appears in a new dress. Do you feel it would be polite to say, "Where did you get that?"

5. When meeting an old friend whom you see has forgotten your name have you ever said, "Don't you know who I am?" or "Guess who this is?"

6. There is a street accident, and although you can be of no help since the injured are being properly cared for, would you hang around anyway to see what goes on?

7. You are walking down a business thoroughfare and catch up with three of your pals arm in arm. Have you ever joined them to make it four abreast?

8. If when leaving the house, a sudden gust of wind slams the door behind you, do you merely make up your mind to avoid startling the others in the house next time you leave?

9. When at a movie with a friend and two adults behind you start talking aloud, do you ever make audible comments to your friend about the annoyance?

10. You have waited a long time for service at a busy store counter and a later customer pushes in ahead of you. In this case do you think it would be proper to say quietly, "Hey, I was here first?"

Answers

1. No. It is better to look for some nice feature and comment on that.

2. No. It is better to ask first if the radio would bother them.

3. No. You should tell them who is calling.

4. No. Mother would be more pleased to hear you say, "I think your new dress looks very nice."

5. No. It is embarrassing to a person to be asked to guess your name when they have forgotten it. Better help out by saying, "I am . . . remember?"

6. No. It is polite to keep out of the way if you cannot help because injured people do not like to be stared at.

7. No. Better to suggest they break up in twos to avoid becoming an inconvenience to traffic.

8. No. More polite to dodge back with, "Sorry! The wind blew the door out of my hand."

9. No. This is a difficult situation but the best way out is to concentrate on the movie and hope for the best.

10. No. This is another bad situation which will call on your reserve of patience and best manners but remember one discourtesy does not call for another. It would be best to look enquiringly at the clerk and hope she will serve you first, otherwise, wait until the discourteous customer has left.

Now for the score. If you have managed to have over seven "no" answers you have come through with flying colors for fine points of courtesy in awkward situations such as those outlined above are all too often overlooked. A score of six or seven will give you average rating. Below six, and you will know you are not as polite a young citizen as you might be. But if you keep in mind that your manners are the printed page on which people read of what you are inside, you will be able to step up your politeness percentage tremendously.—Walter King.

Cantaloupe Seed Necklace

GIRLS, if you would like a smart piece of costume jewellery to wear with your new fall togs make yourself a cantaloupe seed necklace. All you need is a good supply of cantaloupe seeds so be around when mother is cutting up those delicious fruits from your garden and save all the full plump seeds. Now, after placing them in a sieve, so you won't lose any, wash them thoroughly until they are free from all the bits of pulp. Partially dry the seeds between two layers of soft cloth and then spread them out on a clean smooth surface and let them lie in the sun for a couple of days to completely dry.

When the seeds are dry, thread a needle with a strong thread and string them as you would beads by thrusting the needle through the thickest part of the seed. Now paint each seed with vivid red fingernail polish—be careful and do not smear them by touching—and hang your necklace up to dry.

The seeds may be strung closely or arranged in groups of three, five, or any order you wish as they will not readily slip on the thread after they have been coated with the polish. You may have an old clasp which you can attach to your new necklace; if not fasten by securely tying and weaving in the ends of your thread.—EFFIE BUTLER.

A Riddle de Diddle

By AUDREY MCKIM

How soon can you guess what it is?

1. It has three eyelids on each eye, the third is very thin and protects it from strong light.
2. Its front limbs are much smaller than its back limbs and they are called arms.
3. The hand has four fingers on the arms and five toes on the feet of the hind legs.
4. Its mouth stretches from ear to ear.
5. It lives both on land and in water.

Answer: SOUV



September days are fun.

Ad. Index

Apart from giving Guide readers a ready reference to items advertised in this issue, the coupon below may be used to order literature, samples, etc., offered our readers, by our advertisers. Advertisers offering literature, samples, etc., are numbered at the left and these numbers should be used in the coupon. Where stamps, labels, etc., are required an "X" appears alongside the number. The ad. itself will tell you what to send.

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THE COUNTRY GUIDE, September, 1947
Winnipeg, Man.
From the items numbered I have selected the following in which I am interested in the literature, etc., offered.

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P.O. _____
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Please print plainly.

Between Ourselves

I WAS very much surprised to read Anne Baehr's criticism of your July cover, published in the August issue. I liked every bit of it, and the little girl best of all. To me she is natural looking, modest and shy. I have enjoyed it since the minute I saw it.—A.B.C., Melita, Man.

JUST to say my husband and I certainly got a good laugh out of the cover of the little girl and her beaux, published in July. I am 65 and my husband is 71, but we are not too old to appreciate the wiles of women, or for that matter, of humans, for males are equally cursed or blessed with them. Tell our Woodpecker friend the birds and the bees have their tricks too, and the animals. God bless them all and you and us too, not forgetting Anne of Woodpecker.—Mrs. J. T. Witty, Victoria, B.C.

I'D like to ask the anonymous correspondent from Melfort to read the July instalment of the serial story again, and this time more carefully. He or she will discover that the horse was shipped in a local train, not from the Atlantic coast to Idaho, but from Cheyenne to Red Buttes which, so we gather from the story, was only a short distance. The anonymous person had better make sure of her accusations next time.—Ethel Kelly, Hamiota, Man.

ALL of the foregoing soothes our wounded feelings and allows us to face our public again, but we are obliged to publish a scathing criticism from Joe Weston who used to punch cattle on the Bar U back in the days before Alberta was a province: Says he: "Why the stock loading picture on the cover of the August issue? It is all hay wire. Why no loading platform? Where are the brake wheels on top of the car? And in loading thousands of range cattle never have I seen a cattle car painted red. They are always white-washed. Those must be skimmed-milk fed dogies in the corral, or those hay-seeds in suspender overalls watching the proceedings would soon be out of there aided by close personal attention from the cattle if they are like any of the critters I have ever been acquainted with.

"And that fellow with the whip? He would not be ten seconds in a corral of Alberta range cattle. And how does the fellow at the head of the chute close the door of the car when it is full? Does the floor of the chute extend right into the car, or do the steers have to jump over the gap between the end of the chute and the floor of the car? If so, they just don't. The whole picture is cock-eyed and you have the nerve to send it all the way out here to Alberta."—J. R. Weston, Calgary, Alta.

O.K., Joe. Sure they are dogies. And we plead guilty on every count. It is a great pity we have to choose between Charles Hargens, who at least can paint, and some of you bow-legged fellows who are more accurate about details, but who never painted in any color but red. We'll stick to Hargens, and in the end we will have less trouble on this page.

JUST noticed Miss Gilbert's statement about there being no cure for poison ivy. Brother, there is. Take it from one who knows. I was raised in Arkansas and Oklahoma where poison ivy grows "like the green bay tree," and I was extremely susceptible. In fact I sat on some poison ivy once and was blistered through all my clothing.

We just powdered alum in sweet milk and spread it on the infection. That was a quick cure, but alas, I must have become immune to alum as that remedy failed when I was about 17. I began using iodine. It worked, but not

so quickly. Then I came to Canada and have never been within a mile of true poison ivy. I'd have known it if ever I had. I wonder about the ivy back home. Who is it clinging to now that I am gone?—Claudia Langerok, Battleford, Sask.

THE editors regret that we failed to make any capital out of the flying saucers while they were a subject of popular interest. Our difficulty was that we were not able to find anyone who had personally seen one of them. The BBC, however, records the case of Conrad Dunbar, of Pittsburgh, Pa., who swore in court that he had seen them and was later given a divorce on the strength of his evidence because they were the ones his wife had thrown at him.

I WRITE to thank you for the publication of the article, "A Deputy Minister Speaks Out," and at the same time to refute as far as I, a retired farmer, am concerned Mr. Longman's apparent position on the oleo-margarine question. I say "apparent," because he does not specifically endorse the present prohibition. Have our leaders learned so little from the past 30 years that they still think it is possible for us to create plenty by preventing production? The prohibition of oleo is as bad ethics as economics. In fact, I believe that what is wrong ethics must in the long run be bad economics.—Herbert A. C. Brown, Carnegie, Man.

VERY often the most useful article in a magazine gets buried away in some remote corner and doesn't attract the attention it merits. That's the way we feel about the short article by Prof. Shanks on page 74, dealing with leaky concrete water tanks. But even with that handicap we feel that this article will head off more trouble for farmers than any we have published for a long time. This editor feels particularly convinced because he has just completed a little concrete construction at home in which, unwittingly, he disregarded most of the rules Prof. Shanks lays down. We look forward dismally to doing that job over again at some future date. We wish we had run into the professor before undertaking it, and between ourselves a lot of our readers are going to share that regret in respect to some job they have bungled. Concrete work requires more than a strong back.

THE Guide article on rammed earth houses brought in such a flood of correspondence that we kept the subject out of the journal purposely. We feel there is a place, however, for this letter from Mrs. Wilfred Orr, Radville, Saskatchewan, who writes: "We live in a rammed earth house, have constructed a second one, and have close neighbors who live in a third one and have a rammed earth chicken house as well. Our house is one-and-a-half storeys, 24 feet by 28 feet, plastered inside, stuccoed outside. We have lived in it for four years and are very enthusiastic about our home. It is, however, a very poor type of construction for a lazy man."

IF your recent issues of The Guide have been a little longer than usual in getting to you, please overlook it until we have had time to adjust ourselves to the five day week, imposed by our union labor. Which leads us to copy a remark sent to the editor of the London Spectator by one of its readers. "It's a sobering reflection," says he, "that if the five day week had been in force at the time of the Creation, man would not have been created. Would the world then have been a better place?"

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SEPTEMBER, 1947

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22. Hardy Fruits, by G. F. Chipman—25 cents postpaid.
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